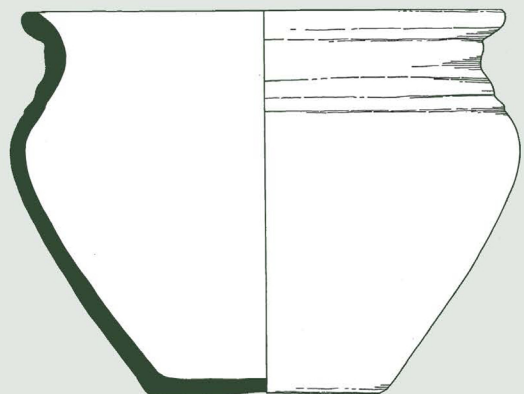
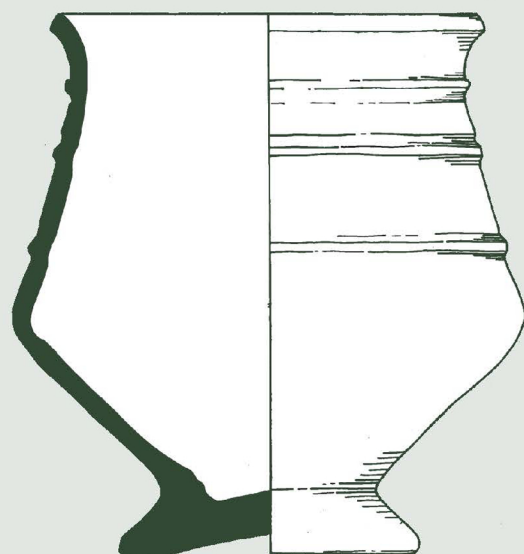
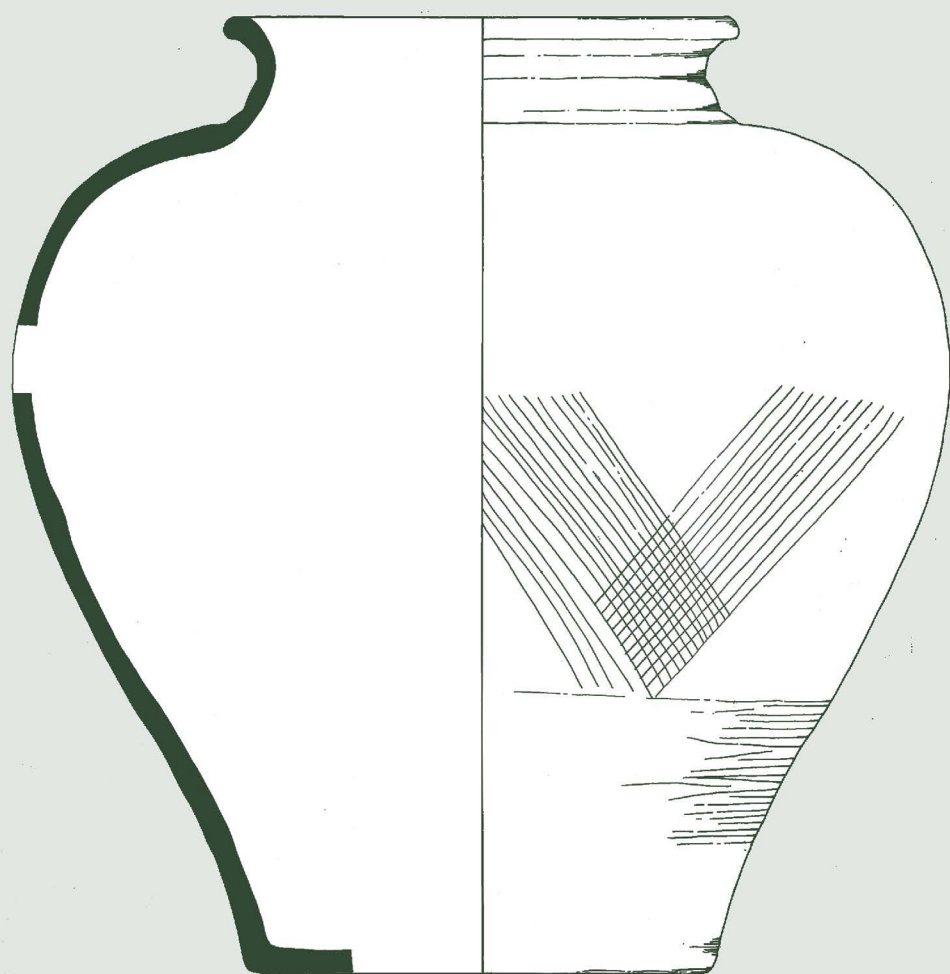


JOURNAL OF ROMAN POTTERY STUDIES

Volume 17



VISIT...

LANZAROTE
Caliente.COM

Journal of Roman Pottery Studies

Journal of Roman Pottery Studies

VOLUME 17

Edited by

STEVEN WILLIS

Published by

 **OXBOW** | books
Oxford & Philadelphia

for

The Study Group for Roman Pottery

Published in the United Kingdom in 2018 by
OXBOW BOOKS
The Old Music Hall, 106–108 Cowley Road, Oxford, OX4 1JE

and in the United States by
OXBOW BOOKS
1950 Lawrence Road, Havertown, PA 19083

© Oxbow Books and the individual authors 2018

ISSN: 0958-3491
Paperback Edition: ISBN 978-1-78570-934-0
Digital Edition: ISBN 978-1-78570-935-7 (epub)

A CIP record for this book is available from the British Library

All rights reserved. No part of this book may be reproduced or transmitted in any form or by any means, electronic or mechanical including photocopying, recording or by any information storage and retrieval system, without permission from the publisher in writing.

For a complete list of Oxbow titles, please contact:

UNITED KINGDOM
Oxbow Books
Telephone (01865) 241249, Fax (01865) 794449
Email: oxbow@oxbowbooks.com
www.oxbowbooks.com

UNITED STATES OF AMERICA
Oxbow Books
Telephone (800) 791-9354, Fax (610) 853-9146
Email: queries@casemateacademic.com
www.casemateacademic.com/oxbow

Oxbow Books is part of the Casemate Group

Front cover: Pottery vessels from the site at Leybourne Grange, West Malling, Kent (see Paper 7)

Back cover: The back cover photographs show the processing of the Elms Farm, Heybridge, Essex, pottery assemblage in 1998 (see Editorial).

Top: Panorama view of the pottery processing room at Bocking Place, Braintree, Essex, in mid-summer 1998. The venue was then in use by Essex County Council Field Archaeology Unit. Photos: Joyce Compton, arranged by Lloyd Bosworth

Lower left: Joyce Compton holding a spouted strainer-bowl that was stratified in a mid-first century AD context. Photo courtesy of Joyce Compton

Lower right: Edward Biddulph gluing a cinerary urn from one of the second century cremation burials. Photo: Joyce Compton

Contents

<i>Editorial Board</i>	vi
<i>Contributors to this Journal</i>	vii
<i>Editorial</i>	ix
<i>Obituaries</i>	xiii
David Peacock by Roberta Tomber	
Cathy Tester by Jo Caruth	
Phil Jones	
1. The import and distribution of eastern amphorae within the Rhine provinces <i>Tyler V. Franconi</i>	1
2. Roman pottery in ritual contexts: types, fabrics and manipulations <i>Constanze Höpken and Manuel Fiedler</i>	11
3. An early Romano-British double flue pottery kiln at Church Road, Snape, Suffolk <i>Antony R.R. Mustchin and Andrew Peachey, with contributions by John Summers</i>	22
4. Roman pottery groups from the excavation of pits, a cremation and other features at Sholden, Kent <i>Rob Perrin with a contribution by J. M. Mills</i>	32
5. Bread and circuses, cutlets and sausages? Romano-British prefabricated ovens and ceramic baking plates <i>Jane Evans, with Alison Heke and Andrew Peachey</i>	46
6. Curved ceramic firedogs in the western Low Lands (Flanders and the western Netherlands) in the Roman era <i>Jeroen van Zoolingen</i>	65
7. A Late Iron Age and early Roman pottery assemblage from Leybourne Grange, West Malling, Kent <i>Edward Biddulph with a contribution by Sean Patrick Quinn</i>	74
8. Fifth and sixth century African Red Slip and Late Roman C wares from <i>Ossonoba</i> (Faro, Algarve, Portugal): the assemblage from Horta da Misericórdia <i>Edgar Fernandes</i>	92
9. Pottery Retrospectives <i>Beth Richardson</i> <i>Peter Webster</i>	110
10. Reviews <i>The Arverni and Roman Wine. Roman Amphorae from Late Iron Age sites in the Auvergne (Central France): Chronology, fabrics and stamps</i> by Matthew Loughton, 2014 <i>Reviewed by Robin P. Symonds</i> <i>Insight from Innovation: New light on archaeological ceramics</i> , edited by E. Sibbesson, B. Jervis and S. Coxon, 2016 <i>Reviewed by Edward Biddulph</i>	115
<i>Résumés (Abstracts in French)</i>	120

Editorial Board of the Journal of Roman Pottery Studies

Dr Barbara Borgers – University of Salzburg
Nicholas Cooper – University of Leicester Archaeological Service
Dr Jerry Evans – Barbican Research Associates
Dr Rien Polak – Radboud University Nijmegen
Louise Rayner – Archaeology South-East/UCL Institute of Archaeology
Dr Roberta Tomber – Department of Science, The British Museum
Dr Peter Webster – National Museum of Wales

Contributors to this Journal

EDWARD BIDDULPH
Oxford Archaeology
Janus House
Osney Mead
Oxford. OX2 0ES
edward.biddulph@oxfordarch.co.uk

JO CARUTH
Suffolk Archaeology CIC
Unit 5, Plot 11 Maitland Road
Lion Barn Industrial Estate
Needham Market
Suffolk. IP6 8NZ
Joanna.Caruth@suffolkarchaeology.co.uk

JANE EVANS
Worcestershire Archive and Archaeology Service
The Hive
Sawmill Walk
The Butts
Worcester. WR1 3PD
Jevans1@worcestershire.gov.uk

EDGAR FERNANDES
Praceta Dr António Afonso Salavisa
N.º 4, R/C Dt.º
6000-426 Castelo Branco
Portugal
edgarmcmfernandes@hotmail.com

DR MANUEL FIEDLER
Memlingstraße 16
D-12203 Berlin
Germany
mfiedler1999@yahoo.com

DR TYLER FRANCONI
University of Oxford
Institute of Archaeology
36 Beaumont Street
Oxford. OX1 2PG
tyler.franconi@arch.ox.ac.uk

ALISON HEKE
Cheshire West and Chester Council
Grosvenor Museum
27 Grosvenor Street
Chester
Cheshire. CH1 2DD
alison.heke@cheshirewestandchester.gov.uk

DR CONSTANZE HÖPKEN
Ministerium für Bildung und Kultur des Saarlandes
Landesdenkmalamt
Am BergwerkReden 11
D-66578 Schiffweiler
Germany
c.hoepken@denkmal.saarland.de

ANTONY MUSTCHIN
Archaeological Solutions Ltd
6 Brunel Business Court
Eastern Way
Bury St Edmunds
Suffolk. IP32 7AJ
antony.mustchin@ascontracts.co.uk

ANDREW PEACHEY
Archaeological Solutions Ltd
6 Brunel Business Court
Eastern Way
Bury St Edmunds
Suffolk. IP32 7AJ
andy.peachey@ascontracts.co.uk

ROB PERRIN
54 Canadian Avenue
Salisbury
Wiltshire. SP2 7JN
robperrin@ntlworld.com

BETH RICHARDSON
MOLA (Museum of London Archaeology)
Mortimer Wheeler House
46 Eagle Wharf Road
London, N1 7ED
brichardson@mola.org.uk

DR JOHN SUMMERS
Archaeological Solutions Ltd
6 Brunel Business Court
Eastern Way
Bury St Edmunds
Suffolk, IP32 7AJ
john.summers@ascontracts.co.uk

DR ROBIN P. SYMONDS
Str. Ana Aslan 32A
810009 Braila
Romania
robinps@yahoo.com

DR ROBERTA TOMBER
The British Museum
Department of Science
Great Russell Street
Bloomsbury
London, WC1B 3DG
rtomber@britishmuseum.org

DR PETER WEBSTER
National Museum of Wales
Cathays Park
Cardiff, CF10 3NP
Peter.Webster@museumwales.ac.uk

DR STEVEN WILLIS
Classical and Archaeological Studies
SECL Cornwallis Building North-West
University of Kent
Canterbury
Kent, CT2 7NF
s.willis@kent.ac.uk

JEROEN VAN ZOOLINGEN
Municipality of The Hague
Department of Archaeology
paJeroen van Zoolingen
Postbox 12 651
2500 DP The Hague
The Netherlands
jeroenvanzoolingen@gmail.com

Editorial

Pottery study is undertaken to collect information, understand, and to convey both the forthcoming data and their interpretation. Often, as many readers will well appreciate, this can take a long period of time and requires considerable dedication and tenacity to see a project through, not least due to the scale of the task in hand: many sherds to catalogue and process, often numbering in the thousands, and/or project timescales where so much else needs to be organized in addition to the pottery report. Project completion and finalized reports are to be celebrated for the achievement they represent, often the product of many months, even years of work. It has long been apparent that to make sense of artefacts and to communicate the information effectively shared criteria and standards are a necessity; typologies have therefore been a fundamental tool serving this end. One of the key workers to advance the typological categorization for Roman pottery in Britain was John Gillam and this year (2017) saw the John Gillam Prize of the Study Group for Roman Pottery advance into its second decade, following its introduction in 2006. The prize is awarded annually for an outstanding contribution in the field of Roman pottery study, an acknowledgement of the fulfilment of a major project, be it a commercial archaeology related pottery report or synthesis arising from such work, specialist study, PhD, or grant funded research. Winners of the John Gillam Prize are listed on the Study Group's website (www.romanpotterystudy.org). This year the prize went to the authors of the report on the pottery from Elms Farm, Heybridge, Essex, a site, said at the time by some, to be the largest open area excavation ever undertaken in Britain. The resultant pottery assemblage was huge and took years to process (see photos on the back cover of this volume). Often specialist reports on pottery, as with other artefacts, are completed long before the full site report is ready for publication; such was the case with Elms Farm. Pottery specialists are accustomed to taking the long view!

The John Gillam Prize bears the name of one of the outstanding pioneer Roman pottery researchers of the twentieth century; a specialist who was concerned with chronology, sources, types and distributions and the story

they told, and someone who characterized, sequenced and interpreted on the basis of, for the time, as robust a set of criteria as might be mustered. Doubtless he would have appreciated the contributions of past winners of his eponymous prize. The quality of attention to context, associations, typological attributes and general rigour he brought to his work anticipated the future. The generation that succeeded him became ever more concerned with methodology: fabric characterization and categorization, approaches to and means of quantification, as well as typo-chronological refinement and the comprehension of specific industries. For decades, attention to, and discussion of, best practice that enables comparison between assemblages has been a common thread. The call to more consistent approaches across the subject and for standardization has oft been repeated in Guidance, Review and Frameworks documents. In this volume Tyler Franconi points up several of the issues that arise where there has been a lack of consistency in methods adopted (see section 3 of his paper below on data quality). While specific circumstances will have determined the way some reports are produced it is fair to say that the great majority of reporting of Roman pottery in Britain in recent years has been to a very high standard and (largely) amenable for use by other researchers. Nonetheless, there is no doubt that greater consistency in the 'means and measures' employed will be enabling and may help offset the impact of what remain challenging times for pottery work (*cf* Richardson this volume). Last year (2016) also saw the publication of *A Standard for Pottery Studies in Archaeology*, a widely disseminated guidance book produced by the Prehistoric Ceramics Research Group, the Study Group for Roman Pottery and the Medieval Pottery Research Group and sponsored by Historic England. The aim has been to outline a Standard, which takes a holistic view of pottery collection, processing, archiving and contribution in wider projects that, in the words of the booklet, 'should be recognised as a statement of the best way to approach all aspects of pottery work'. One of the purposes of the Standard is to highlight the fact that, in order to ensure the best outcomes, the needs of those

reporting the material must be included at all stages of the project work of which pottery is a part. Hence the target audience for this publication is suitably broad. This current discussion on methods and standards is, of course, one that extends to all areas of the empire, and further, where Roman pottery is studied.

Significant advances have been made recently that will strengthen work with Roman pottery, providing resources that can be quickly accessed and provide criteria for shared labels and standards. The National Roman Fabric Reference Collection handbook is now available online (www.molas.org.uk/projects/fabrics_tei.asp) and more practitioners working with material in Britain are systematically employing its coding system (as can be seen with contributions to the present volume). This is supported by the work on making kiln data more accessible and Andrew Peachey's ongoing endeavours to this end in Britain, developing from the gazetteer produced by Vivien Swan (www.romanpotterystudy.org/sgrp-publications), won the John Gillam Prize in 2016. It is likewise positive news that the Worcestershire Ceramics Online Database (www.worcestershireceramics.org) has continued to grow from strength to strength. This is now a well-established resource, of utility for those working on ceramics from the West Midlands and, indeed, much beyond. All three of these, now routinely employed reference tools, developed out of what were at their outset pioneering initiatives, and their enhancements have facilitated their use and the ease of research and pottery learning for all. Following the annual Study Group Conference at Carlisle this year, my predecessor as Journal editor, Pam Irving, noting how far subject related resources online have advanced, has highlighted how much, excellently-collected but currently inaccessible, pottery data there is in various types of archives that ideally should be brought online. This chimes with Historic England's present priorities, so there is reasonable prospect of progress on this front.

This volume provides an opportunity to remember colleagues who made very significant contributions to the study of Roman ceramics and related fields, and with whom many members will have worked and shared experiences of conferences and activities. Cathy Tester was a very popular member of the Group, a frequent attendee at annual conferences and regional meetings of the Study Group, who served on the Committee of the Group (2010–2013). The appreciation of her contribution by Jo Caruth, appearing in this volume, shows why Cathy became such a valued colleague and friend.

Phil Jones had great knowledge in a number of fields and amongst his skills and expertise he was a specialist in Roman, Saxon and Medieval ceramics. Phil was a hugely driven and productive personality, known for robust opinions, absorbing conversation and public speaking and as an impassioned defender of heritage. A rounded appreciation of his life and achievements prepared by Jon Cotton has appeared in the *Surrey Archaeological*

Society Bulletin 456 (June 2016) and a shorter vignette by Lorraine Mephram in the Newsletter of the Medieval Pottery Research Group (number 83, April 2016) and so here we include a photo of Phil and simply record four of his accomplishments by way of an illustration: the publication *Roman and Medieval Staines-upon-Thames*, providing detailed information on a series of excavations carried out close to the modern High Street of the town through the 1970s and 1980s, editorship of the *Surrey Archaeological Society Bulletin* for twenty years, his aptitude for pottery drawing (much of it in his spare time) and his memorable lecture concerning the fate of the Roman pottery production site in Savernake Forest at the 2009 annual SGRP conference held at Chichester.

Over several decades of dedicated work our member Rod Mackey established himself as a key figure in archaeological endeavours in East Yorkshire, contributing to the recovery of evidence through excavation work and in over-seeing a number of Roman projects including collation of information on the Roman villa remains at Welton Wold, near Brough on Humber. Amongst many contributions Rod presented a paper on the pottery from the sites at Welton Wold and North Cave at the Hull conference of the SGRP in 1996. A fuller record of Rod's life in archaeology can be found in the newsletter of the East Riding Archaeological Society *ERAS NEWS* No. 86, which is available online.

David Peacock, who passed away just as the previous volume of this Journal was going to press, was a towering figure in ceramic studies. Roberta Tomber's obituary conveys his extraordinarily dynamic initiatives, the training he provided and the body of work he generated. The subject will benefit from the fundamentals he put in place for years to come (eg Evans *et al.* this volume). Roberta has, in a number of ways, taken forth the torches he ignited, as we see in the development of The National Roman Fabric Reference Collection (*cf.* above).

Lastly we remember Jan Thijssen, a friend to members of the Study Group, who led so much research at Nijmegen through excavations and artefact studies. Jan combined a warm and welcoming character, and sociability, with sharp awareness and skilful archaeological comprehension, attributes on display at the Study Group annual conferences held at Ghent (2006) and Amsterdam (2011). His standing and the affection in which he was held is reflected in the festschrift volume for Jan edited by Harry van Enkevort (*Roman Material Culture: Studies in honour of Jan Thijssen* published by Oxbow in 2009) and the wide sadness at his passing in December 2016.

The *Journal of Roman Pottery Studies* welcomes the submission of articles for publication on the subject of Roman pottery and related material and themes, and some of the range can be seen in the present volume. Indeed, for the Journal to continue it needs regular submissions, and the fact that it is two years now since the appearance of volume 16 is due to the fact that it was only by August

this year (2017) that sufficient material was ‘in’. For many years now the Journal has had a system shared with many learned Journals of double referring of submissions for critical peer review; the editor and the Study Group Committee are grateful to those who undertook this refereeing role, resulting in the present peer-reviewed volume. We now also have the asset of an Editorial Board of distinguished subject specialists to call upon for advice whenever required. The names of our Board members are listed in this volume and I am grateful to these colleagues

for agreeing to undertake the role. I am also pleased to thank here Cate Davies for working on a set of illustrations for this volume, to Lloyd Bosworth (University of Kent) for assistance with formatting several photographs received, Fiona Godfrey, Gwladys Monteil and Sonja Willems for preparing the translations of the Abstracts, and Jeremy Evans for undertaking several tasks for the Journal. Andrew Peachey arranged for the obituary for Cathy Tester.

Steven Willis, September/October 2017

Obituaries

David Philip Spencer Peacock (1939–2015)



David Peacock in the Cyclades, June 2013. Photo: Barbara Peacock.

‘DPSP’ was never a member of the Study Group, yet his influence and impact on its members and, more generally on Roman pottery studies, is immeasurable. Through a series of innovations, David revolutionised many aspects of pottery studies by his eclectic approach: he pioneered ceramic petrography in Britain, through his work at Carthage established a method for the processing and publication of material from large-scale excavations, introduced ethno-archaeological models to the study of Roman pottery and developed the study of Roman amphorae that drew upon all these approaches.

Those of us who were amongst his legions of PhD students benefitted from his wisdom (how *could* he read a draft so quickly yet always put his finger on the problem..?), his humour, his invariable good cheer, his ability to make extremely difficult tasks seem easy and, not least, his love of a good chat. Those of us who worked in the field with David, in Tunisia, latterly in Egypt and

then Eritrea (a life-changing experience offered to many of his students) were even more privileged. David had an unerring sense of what was important in the landscape or amongst the finds. Despite the mountains of these finds, he never failed to make time to explore the area, stop for a beer or declare it was time for a sundowner. Through his major field projects at Mons Porphyrites, Quseir al-Qadim and Adulis, he brought together congenial teams that were unobtrusively schooled in the Peacock methods.

David trained as a geologist at the University of St Andrews (PhD 1965), but had been involved in fieldwork since schooldays, encouraged by John Hurst, and archaeology was always his intended aim. In fact, surface pottery on the playing fields at his school led to David’s first excavation of a Stamford-ware pottery kiln, followed by another excavation at Snail Down while still at school. After a short research appointment at Birmingham University following his PhD, DPSP spent his career at Southampton, joining in 1968, with a Chair from 1990 until 2004, when he was awarded the title of Emeritus Professor.

David’s geological training and more widely his application of scientific methods in archaeology remained a hallmark of his research. Between 1967 and 1970 he published a number of seminal articles demonstrating the value of petrography for broader interpretations, including: ‘A petrological study of certain Iron Age pottery from Western England’ (1968) and ‘A contribution to the study of Glastonbury ware from South-Western Britain’ (1969), articles which radically changed British prehistory, illustrating the movement of pottery beyond local regions. Similar techniques were also employed for Roman pottery, particularly amphorae, whose study he systematised. Numerous important articles established the subject, culminating in what was the standard text book for over 20 years: *Amphorae and the Roman Economy* (1986 with David Williams). Only recently has this book been surpassed, by a website established by two of David’s close colleagues, Simon Keay and David Williams, available via the Archaeological Data Service, York.

Pottery and Early Commerce: Characterization and Trade in Roman and Later Ceramics (1977) was another landmark publication, an edited volume with contributions by former students and colleagues from Southampton. It show-cased the value of petrographic studies and introduced the methods he (with Mike Fulford) had undertaken at Carthage to a British audience. These techniques, including a guide for macroscopic fabric evaluation for large-scale pottery sorting and importantly supporting quantification (including weight) as a standard procedure, have been universally adopted at excavations across the Mediterranean (Fulford and Peacock, *Excavations at Carthage, The British Mission*, 1984 and 1994).

In Britain, David encouraged the widespread application of ceramic petrography by promoting a full-time post funded by the Department of Environment, then English Heritage. The post, held by David Williams, provided an invaluable service to all DoE/EH excavations between 1975 and 2007 and had the wider outcome of ensuring that scientific analysis became standard procedure within British pottery studies.

Another publication, *Pottery in the Roman World. An Ethnoarchaeological Approach* (1982), continues to be of far-reaching importance. The result of months of travel and research throughout Europe and North Africa with his family, it provides a framework for the classification and interpretation of the production and distribution of ceramics – both pottery vessels and building materials. Not only did it introduce the use of ethnographic analogy into classical pottery studies, but provided a model of middle-range theory still strong today.

The integration of scientific techniques and archaeology was a constant feature of David's research. To disseminate these methods, he twice established a taught Masters course at Southampton. The first, an MSc in the 'Scientific Analysis of Artefacts,' was launched in 1979 – before taught master degrees were a common feature in British universities. It ran for only 2 years, with only two students, including myself, graduating. The second, an MA in 'Ceramic and Lithic Analysis for Archaeologists,' was longer lived with numerous students participating between 1996 and 2014. As a lasting resource, the department now houses the 'David Peacock Collection' of thin sections and archaeological samples.

By the late 1980s David's constant lament was that he wished to 'give up pottery'. While for obvious reasons he never entirely succeeded, he did turn his attention to stone artefacts and stone in the landscape. An early publication was a sketch of the Roman millstone trade based on source characterization published in *World Archaeology* (1980). Collaborating with other geologists (particularly Olwen Williams-Thorpe) and turning to chemical as well as petrographic techniques, he investigated numerous case studies, such as the distinction between decorative igneous rocks from Egypt, Turkey and Italy (eg Peacock *et al.*,

'Mons Claudianus and the problem of the *granito del foro*', 1994). A survey of the potential and problems of stone in archaeology was commissioned by English Heritage (*The Archaeology of Stone*, 1998) and led to 'Stone in Archaeology: a Digital Resource', also available via the Archaeological Data Service, York.

Participation in the excavations at Mons Claudianus and as co-director at Mons Porphyrites (with Val Maxfield) provided the opportunity to investigate all aspects of stone exploitation from these two imperial quarries. Major publications followed (e.g. Peacock and Maxfield, *Survey and Excavation, Mons Claudianus, 1. Topography and Quarries*, 1997).

In 1993 'The site of Myos Hormos: a view from space' used satellite technology to equate the modern site of Quseir al-Qadim with the ancient one of Myos Hormos, a technique he relied upon for many projects. The identification of Quseir as Myos Hormos, regarded as controversial at the time, is now universally accepted and confirmed by documents recovered from his excavations at Quseir al-Qadim (with Lucy Blue, 1999–2003). This excavation firmly established his contribution to Red Sea trade and Indian Ocean archaeology, solidified by two further projects, a co-directed field survey at Adulis (with Lucy Blue, 2004–2005) and a masterful study of ballast in the Indian Ocean. The latter resulted in *Food for the Gods* (2007 with David Williams), which used characterization of basalt to unravel the incense trade.

David was actively pursuing his research and making plans for future work until his unexpected death. His final publication, *The Stone of Life* (2013), focussed on millstones but as always touched on much broader issues of food production and trade. Published by the Highfield Press, set up by David, the press is now managed by David's son Andrew and is one of his many legacies.

David's ground-breaking methodologies and wide-ranging research interests had significant impact on Roman archaeology, and particularly understanding of the Roman economy. Widely recognised in the UK and internationally his contribution was tangibly acknowledged through receipt of both the British Academy's Kenyon Medal (2011) and the Archaeological Institute of America's Pomerance Award for Scientific Contributions to Archaeology (2012).

This year (2017) the Department of Archaeology at the University of Southampton celebrated its 50th Anniversary. David's absence at this celebratory event in April was profoundly felt, not only because of the friendship that he offered to students and colleagues alike, but for his on-going commitment to the department and University. He served on innumerable committees throughout his time there and was Head of Department (twice) between 1998 and 2003. It is therefore fitting that the department has established the David Peacock Memorial Appeal to provide student bursaries to post-graduates.

Roberta Tomber



Cathy Tester pictured while supervising an archaeological excavation in Kandahar, Afghanistan, in 1979, at a time when, contrary to its prominence in news stories in the West since the Soviet invasion at the end of that year, few would have known where the country was located or imagined being there or engaging in archaeological exploration. Photo courtesy of Andrew Tester.



David Peacock suitably captured on another pioneering exploration, in this case by the Suez Canal in 1993. Photo: Roberta Tomber.

Cathy Tester (1949–2016)



Cathy at lunchtime at The White Hart, Hackleton, during a Study Group regional meeting on Saturday 27th June 1992, held at Hackleton and Piddington villa. Photo: Sue Wade.

Cathy Tester, an archaeologist for nearly 50 years and Roman pottery specialist and Finds Officer with Suffolk County Council Archaeological Service for 30 years, died in the summer of 2016 aged 67. She was born into a family of three sisters and a brother in Detroit in 1949. Cathy started studying Anthropology at Wayne State University but dropped out whilst on holiday in England to work on the digging circuit. She was a participant on some of the best-known excavations of the 1970s and 1980s such as Wroxeter, Poundbury, Brampton and Kelvedon where she met many of her Suffolk friends, including Andrew whom she later married. Ever fearless, she took up an invitation to supervise for a summer in Kandahar, where she was responsible for a team of Afghan men, looking for evidence of the occupation of Alexander the Great as he expanded his empire to India.

In 1980 Cathy and Andrew moved from supervising on Youth Opportunities Programme projects (YOPs) with the Norfolk Archaeological Unit to supervising first YOPs and then Manpower Services Commission (MSC) teams with Suffolk County Council. These schemes provided work for the young and long-term unemployed helping address a serious social concern of the early and mid-1980s. Cathy was extremely good at managing young people, she cut an impressive figure, knowledgeable, kind and very funny. Amongst her achievements was the development of a system whereby young non-professional diggers could excavate, record, lift and parcel-up the 150 Anglo-Saxon skeletons in the Middle Saxon cemetery at Brandon (Suffolk) with proficiency; it is thanks to her careful co-ordination that so much information could be retrieved from these bones, many of which were little more than dust.

After the birth of Althea and then Agnes in the later 1980s Cathy continued to develop her pottery skills working at home on the pottery from the Roman fort at Pakenham (Suffolk) and developing the fabric and types series that became the standard for Roman pottery in Suffolk. She finally returned in 1994 to employment with Suffolk County Council Archaeological Service analysing and recording all the late Iron Age and Roman pottery unearthed by the Suffolk Unit and becoming an expert in samian pottery. She was the mainstay of the finds department of Suffolk County Council Archaeological Service from that day until her retirement in 2014 at the point when the Field Team was divested into a private company. She produced numerous reports including substantial contributions to the *East Anglian Archaeology* volumes on Hacheston (2004) and Scole (2014). She was very generous with her knowledge, never one to keep what she knew to herself, and a rewarding specialist to work with. Cathy died peacefully at home with her family around her, and will be much missed in Suffolk and beyond.

Jo Caruth

Phil Jones (1948–2016)



Phil enjoys some refreshment in the Avon Valley, somewhere between Pewsey and Old Sarum, on Thursday 23rd July 2009. Photo: Jan Jones.

The import and distribution of eastern amphorae within the Rhine provinces

Tyler V. Franconi

Abstract

This paper examines the evidence for amphorae of eastern Mediterranean origin present in the area of the Rhine basin. The nature of the available sample is considered. Issues arising from both the potential impacts of research agendas on the types of sites subject to excavation, and previous quantification methods used by those reporting assemblages, and, indeed, an absence of quantification, are noted. Whilst representing only a fraction of the amphorae borne consumables arriving in the Rhine provinces, eastern amphorae nonetheless occur in a wide variety of forms, though three types are more frequent than others, with wine featuring as the most prominent content. Figures suggest the supply to the region was 'even' between the military and the civilian populations, or at least they had equal access to amphorae from these sources. This raises questions regarding the supply mechanisms. The early Roman period saw the greatest level of import, with numbers declining through the first century AD. Transport costs and the rise of regional and local production of wine probably account in large part for the decline, though the trend to gradual fall-off of long distance supply is seen more widely in the Roman amphora trade. Examples from the east occur in low numbers in the Late Roman period, and are likely to have had a rarity value, and are probably to be associated with elite consumers.

Keywords: The Rhine basin; archaeology; Roman period; amphora; trade; economy

1. Introduction

Despite an increasingly large amount of published material, synthetic and comparative studies of Roman amphorae assemblages have remained uncommon. This lack of synthesis has meant that amphorae, a valuable dataset for studying the Roman economy, have only been able to be utilized in an anecdotal manner to discuss ancient trade, relying on individual, well-known sites that may or may not be representative of wider patterns of production, transportation, and consumption. These well-known sites have been crucial to make evident the value of studying amphorae to better understand the ancient economy; the large number of data now available both require and enable a new approach. In order to advance the discussion, new methods must be developed to incorporate quantified ceramic data into discussions and models of the ancient economy (Brughmans and Poblome 2016, 406), and this necessitates synthetic studies at the regional or supra-regional level.

The data suitable for this sort of study are unevenly published across the territory of the Roman Empire, with some regions being much better studied than others. The

Rhine provinces of northeastern Gaul and Germany, corresponding to parts of modern Switzerland, France, Germany, and the Netherlands, provide a large amount of published ceramic assemblages. A full discussion of every aspect of these assemblages would require a much longer publication, comparable to work done elsewhere, as in northern France (Laubenheimer and Marliere 2010), but a specific discussion of one category of amphorae, those originating from the eastern Roman Empire (here meaning the provinces from Greece to Egypt around the eastern Mediterranean), is explored in this paper as an example of the contribution that regional studies are able to make to an understanding of ancient trade, focusing on the types of products imported to the Rhine region, their geographical distribution within this area, and the chronology of these trade connections.

This study first discusses the history of the collection of these data and the problems inherent to discussing large archaeological datasets. It goes on to examine aspects of the eastern amphorae present along the Rhine: the forms, contents and origins, the chronology of importation, and the places of consumption. We can see a significant decline

in the consumption of eastern products over the course of the first century AD, and this can be directly related to local economic developments in Gaul and Germany.

2. The study region and its history of ceramic research

The Rhine frontier stretched from the Alps to the North Sea and included the Roman provinces of Germania Superior, Germania Inferior, and Gallia Belgica. Initially conquered under Caesar, intensive development from c 30 BC onwards led to a densely settled region in which a substantial civilian population lived alongside the permanent military garrison of the *Limes Germanicus*. The Rhine and its tributaries created an integrated transport network in which traffic and communication moved easily across a relatively large and varied landscape, effectively linking the settlements of this region along the riverine corridor.

With over a century of high quality excavation and documentation of archaeological sites, the material record of this region is one of the best in the Roman world. The study of amphorae from sites along the Rhine dates back to the early 20th century when excavations at Haltern (Loeschke 1909), Hofheim (Ritterling 1913), Niederbieber (Oelmann 1914), and Alzey (Unverzagt 1916) created important ceramic typologies and chronologies. Later publications from Oberaden (Loeschke 1942), Windisch (Ettlinger and Simonett 1952), and Nijmegen (Stuart 1963) paved the way for the more recent work at Augst (Martin-Kilcher 1987; 1994) and Mainz (Ehmig 2003) as well as regional studies of eastern France (Baudoux 1996), northern France (Laubenheimer and Marliere 2010) and the central Rhine (Ehmig 2007a). In addition, numerous excavation reports have included sections on recovered amphorae as a matter of course.

To date, at least 65 sites in the region have published quantified reports on their amphora assemblages. The abundant data from the Rhine allow for detailed examinations of the distribution and consumption of different amphora-borne products within the region. The documentation of trade connections and their changes plays an important role in discerning the economic history of both the Rhine basin and those regions with which it was connected.

Amphorae from the eastern Mediterranean are generally quite rare along the Rhine and in neighbouring regions of northern Gaul and the relatively small dataset has already been the subject of several studies. Over a decade ago, the main forms found across Germania Inferior, Gallia Belgica, and southeastern Britain were documented by Vilvorder, Symonds and Rekk (2000), and the 11 types that they outlined can be expanded by material from the Rhine. Van den Berg (2012) produced unquantified distribution maps of 'exotic' amphorae forms found at Nijmegen, that now augment the distribution maps of Cretan (Marangou-

Lerat 1995) and Levantine (Vipard 1995) amphorae, as well as those of other forms in Peacock and Williams (1986) such as the Camulodunum (Cam) 184, Cam 189, and Kingsholm 117. The recent documentation and distribution of amphorae from western Asia Minor (Papaioannou 2011) also must be considered. It is the goal of this study, therefore, to discuss the quantified evidence for eastern imports into the Rhine region over time and to discuss the wider economic implications of their trade and consumption.

3. Data quality

Before discussing the amphorae directly, it is important to note that archaeological data are what has recently been termed 'characterful' (Cooper and Green 2016, 271): they have been generated and assembled by different people in different places at different times with different methods, goals, and agendas in mind. This 'character' means that all ceramic assemblage reports were not created equal, and this is a major obstacle to the study of regional patterns of consumption. Different sites have used different collection policies, different typological classifications, and different quantification methods. Not all amphorae sherds may have been kept and recorded (see, for instance van der Werff 2004, 290), they may have been identified as different forms, and they may well have been counted differently. We must also remember that we only have data from where they have been researched and published, and thus the geographical distribution of sites presented in Fig. 1 is not a distribution of ancient trade or consumption, but rather where it has been documented. The three clusters evident in the Netherlands, the Middle Rhine, and around the Upper/High Rhine are artefacts of publications, not (at least not definitely) evidence of ancient realities.

These problems of comparing data are significant but not insurmountable. The character of archaeological material needs to be appreciated and understood, and then needs to be assessed for its usefulness. For the purposes of this study, where amphorae generally are uniformly identified within a set number of typologies and published with a set number of quantification styles, there is much to be gained by taking a synthetic approach. While there is nothing to be done about sites where work did not fully record or publish all of their finds, different typologies can be equated and qualitative data extracted, especially where drawings of amphorae are published.

The issue of quantification is more complicated. Most sites in the region have been published with a count of minimum number of individuals (MNI), though some are published with counts of rims, bases, and handles (RBH), and two (Dangstetten and Waldgirmes) are published as a maximum number of vessels present (Max) (Table 1). It is often not possible to overcome these differences when synthesizing material, and so each table presented here explicitly states the quantification method and,

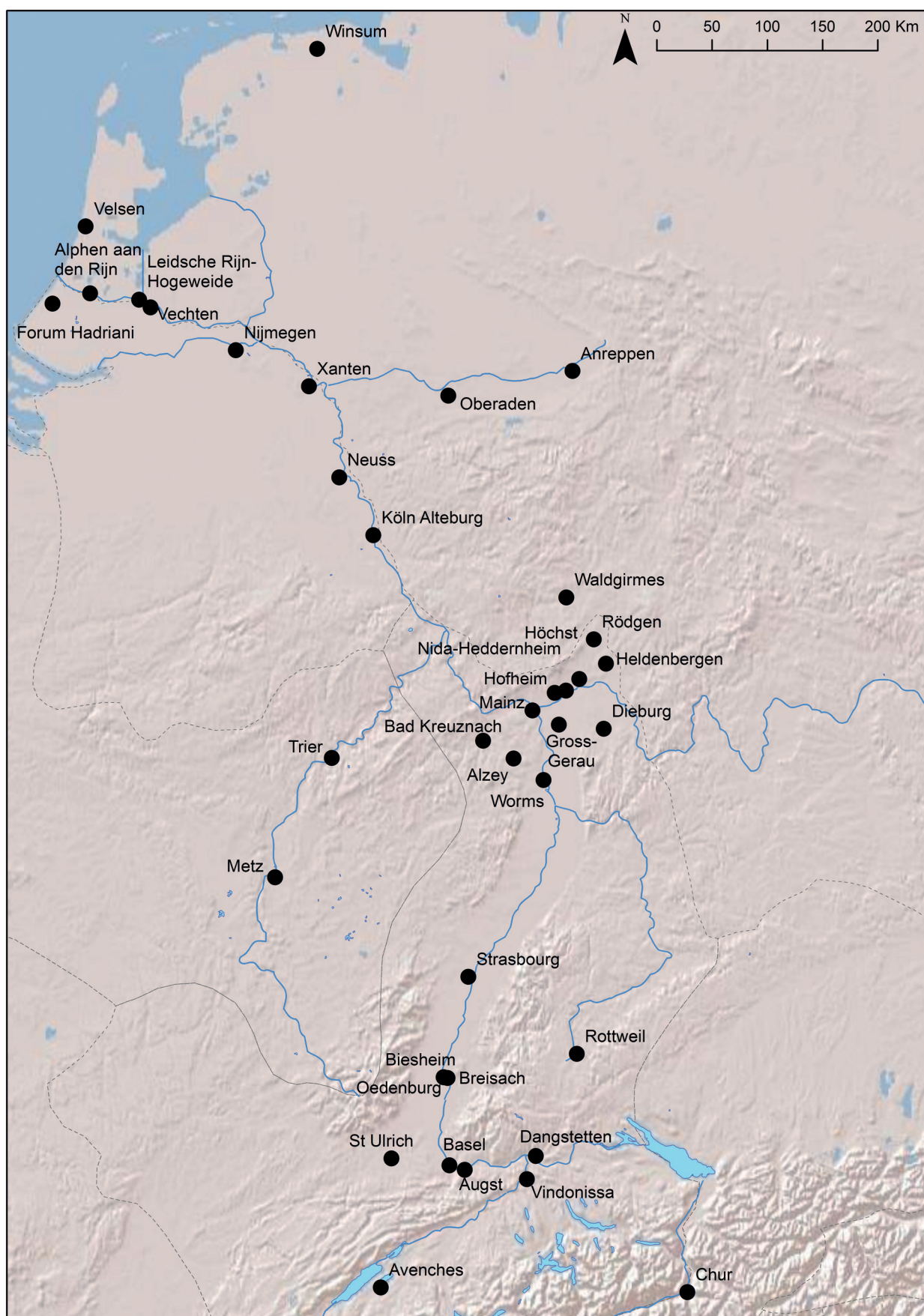


Figure 1. Sites in the Rhine provinces with published and quantified eastern amphorae (see Table 1 for details).

Table 1. Sites in the Rhine provinces with published and quantified eastern amphorae (EM: total of eastern amphorae from site; EM%: the percentage of each assemblage made up by eastern amphorae)

Site	Reference	Type	Quant.	Total	EM	EM%
Alphen aan den Rijn	van der Werff 2003	Military	MNI	38	4	11%
Alzey	Ehmig 2007a	Settlement	MNI	342	2	1%
Anreppen	González Cesteros and Tremmel 2015	Military	MNI	284	46	16%
Augst	Martin-Kilcher 1994	Settlement	RBH	5354	236	4%
Avenches	Meylen-Krause 1995	Settlement	MNI	561	2	<1%
Bad Kreuznach	Ehmig 2005; 2007a	Villa	MNI	186	9	<1%
Basel	Deschler-Erb 2008	Settlement	MNI	194	1	1%
Biesheim	Baudoux 1996	Settlement	MNI	279	30	10%
Breisach	Zagermann 2010	Military	RBH	36	1	3%
Chur	Martin-Kilcher 1991	Settlement	MNI	114	4	4%
Dangstetten	Ehmig 2010	Military	Max	2208	187	8%
Dieburg	Ehmig 2007a	Settlement	MNI	466	3	<1%
Gross-Gerau	Ehmig 2007a	Military	MNI	1465	4	<1%
Heldenbergen	Ehmig 2007a	Military	MNI	385	1	<1%
Höchst	Ehmig 2007a	Military	MNI	66	7	11%
Hofheim Steinkastell	Ehmig 2007a	Military	MNI	302	2	1%
Hofheim Vicus	Ehmig 2007a	Settlement	MNI	190	1	1%
Köln Alteburg	Hanel 2003	Military	MNI	250	2	<1%
Leidsche Rijn-Hogeweide	Niemeijer 2006	Settlement	MNI	21	3	14%
Mainz	Ehmig 2003	Settlement	RBH	1987	193	10%
Metz	Baudoux 1996	Settlement	MNI	209	6	3%
Neuss camp 1	Carreras Monfort and González Cesteros 2013; Carreras Monfort and Berni 2015	Military	MNI	13	2	15%
Neuss camp 2	Carreras Monfort and González Cesteros 2013; Carreras Monfort and Berni 2015	Military	MNI	45	5	11%
Neuss camp 3	Carreras Monfort and González Cesteros 2013; Carreras Monfort and Berni 2015	Military	MNI	32	7	22%
Neuss camp 4	Carreras Monfort and González Cesteros 2013; Carreras Monfort and Berni 2015	Military	MNI	11	1	9%
Neuss camp 5–7	Carreras Monfort and Berni 2015	Military	MNI	76	11	14%
Nida-Heddernheim	Ehmig 2007a	Settlement	MNI	2061	8	<1%
Nijmegen	Carreras Monfort and van den Berg 2017	Military	MNI	690	131	17%
Oberaden	González Cesteros and Tremmel 2011–12	Military	MNI	341	24	7%
Oedenburg camp A	Viroulet and Baudoux 2009	Military	MNI	227	5	2%
Rödgen	Ehmig 2007a	Military	MNI	265	17	6%
Rottweil	Franke 2003	Military	MNI	71	4	6%
St. Ulrich	Baudoux 1996	Villa	MNI	61	1	2%
Strasbourg	Baudoux 1996; 1998	Settlement	MNI	777	27	3%
Trier Kaiserthermen	Hussong-Cüppers 1972	Settlement	MNI	60	2	3%
Vechten	van der Werff 2004	Military	RBH	29	5	17%
Velsen	Goudswaard 1990	Military	MNI	258	12	5%
Vindonissa 1	Martin-Kilcher 2003	Military	MNI	27	2	7%
Vindonissa 2	Martin-Kilcher 2003	Military	MNI	100	9	9%
Voorburg/Forum Hadriani	Van Kerckhove 2014	Settlement	MNI	113	1	1%
Waldgirmes	Ehmig 2015	Settlement	Max	1089	107	10%
Winsum	Galestin 2003	Military	RBH	48	2	4%
Worms	Ehmig 2007a	Settlement	MNI	485	6	1%
Xanten	Carreras Monfort 2006	Settlement	MNI	332	33	10%

when amalgamating data by form or site type, keeps the data separated by the method of quantification. This means that we cannot produce very neat numbers for the entire region, but we can compare like with like, as is done below in Tables 2 and 3. In some cases where the publication of pottery has been thorough, as at Xanten where amphorae were published by total sherds, weight, EVE, spikes, and handles (Carreras Monfort 2006), the data can be converted into an estimation of MNI despite

not being originally published as such, and I have done this where possible.

Thus while plenty of issues exist, they should not deter attempts to discuss ceramic consumption at regional scales. There is much un-realized potential in comparative studies that critically assess and present the possibilities and limitations of data (see Laubenheimer and Marlière 2010 for a similar exploration in northeastern France). In what follows, I examine how the relatively small dataset

Table 2. Eastern amphorae forms present in quantified assemblages from Rhine provinces, with totals arranged by quantification method

Form	Origin	Contents	Production chronology	MNI	RBH	Max
August 46	Palestine?		1 century AD		1	
August 47		Wine	2–4 century AD		7	
August 55 (Agora F65–66)	Aegean?		1 cent BC–4 cent AD		5	
Camulodunum 184 (Rhodian)	Rhodes	Wine	1 cent BC–2 cent AD	204	188	197
Camulodunum 189 (Carrot/Schöne Mau 15)	Levant	Fruit/wine?	1 cent BC–1 cent AD	20	27	
Crétoise 1	Crete	Wine	1–4 century AD	1		
Crétoise 2/3	Crete	Wine	1–3 century AD	1		
Dressel 2–5	Multiple	Wine	1 cent BC–2 cent AD	129	145	65
Dressel 43 (Crétoise 4)	Crete	Fruit	1–3 century AD	14	16	
“Eastern Mediterranean”		Wine		47	28	18
Käpitän I	Aegean?	Wine	1–2 century AD		7	
Käpitän II	Aegean?	Wine	3–4 century AD	6	1	
Kingsholm 117 (P&W 56)	Levant	Wine?	1–2 century AD	5	4	14
Late Roman 1	Cilicia	Wine/oil?	3–7 century AD	1	1	
Late Roman 4 (Gaza/Almagro 54)	Levant	Wine	1–8 century AD	5	3	
Oberaden 76/Chian	Chios	Wine	1 cent BC–1 cent AD	2	1	
Pompeii 38/Cnidian	Cnidos	Wine	1 cent BC–1 cent AD	4	3	
Totals				439	437	294

Table 3. Eastern amphora forms by site type and quantification method

Form	Settlement			Military			Villa
	MNI	RBH	Max	MNI	RBH	Max	MNI
August 46		1					
August 47		6			1		
August 55 (Agora F65–66)		5					
Camulodunum 184 (Rhodian)	58	182	24	145	6	173	1
Camulodunum 189 (Carrot/Schöne Mau 15)	11	27		9			
Crétoise 1				1			
Crétoise 2/3				1			
Dressel 2–5	18	145	65	110			1
Dressel 43 (Crétoise 4)	10	16		4			
“Eastern Mediterranean”	23	28	18	19			5
Käpitän I		7					
Käpitän II	4	1					2
Kingsholm 117 (P&W 56)		4		5		14	
Late Roman 1		1					1
Late Roman 4 (Gaza/Almagro 54)	3	3		2			
Oberaden 76/Chian				2	1		
Pompeii 38/Cnidian	1	3		3			
Totals	128	429	107	301	8	187	10

of eastern amphorae along the Rhine frontier can be compared and what this consideration demonstrates in terms of trade and economic life.

4. The data

Published and quantified data from a total of 65 sites located within the Rhine basin were collected into a database, of which 43 had documented eastern types. Since only quantified assemblages are used, many other sites, though excavated, are left out of this discussion since they lack comparable data. For this reason, major Roman cities like Cologne (now under study with preliminary results in Höpken 2013, with previous work on *tituli picti* by Ehmig 2007b and 2009) and Trier (excepting

the Kaiserthermen assemblage considered here) are unfortunately poorly represented.

The full collection of all amphorae assemblages contains data from 38 forts, 22 settlements, and five villas, accounting for 41%, 58%, and 2% of the total respectively, and offering a significant cross-section of sites in the region. The total assemblage for the region shows the dominance of products from Spain (54%) and Gaul (22%), while Italy (6%), the eastern Mediterranean (4%), and North Africa (1%) make up the remainder. The products once carried in these containers can be divided approximately between olive oil (38%), wine (including defrutum) (30%), and fish products (19%), with small amounts of other products such as fruit, alum, and beer (14%).

As noted the 43 sites with eastern amphorae are made up of 23 forts, 18 settlements, and two villas (Fig. 1), though for the majority of eastern amphorae are present in settlements, that produced 57% of all the eastern material; forts produced a further 42%, and villas only the final 1%. The distribution of finds by site type is discussed further below. Many of these sites, especially the military sites, date to the Augustan or early Julio-Claudian period, which is largely the outcome of recent excavation and publication agendas within Germany and the surrounding region. The chronology of the importation of eastern evidence is also discussed below, but we must remember that the focus on early military sites arising from targeted research priorities has had an influence on the prominence of these earliest data.

5. The form repertoire

Three main amphorae types account for the majority of the total eastern amphorae documented in the Rhine provinces, with 14 other forms known in small quantities (see Table 2).

The Rhodian Cam 184 form is the most common eastern form recorded, accounting for an average of 51% of all quantified eastern imports to the Rhine basin. These wine amphorae are recorded at 30 sites in the database. They appear in the earliest phases of Roman occupation, being documented at Neuss, Basel, and Windisch, and continue into the mid-second century at Augst (Martin-Kilcher 1994, 490–2). Peacock's suggestion that these amphorae were linked to a Claudian tax imposed upon Rhodes (Peacock 1977, 270) is no longer tenable as the sole explanation for their presence (Carreras Monfort 2006, 35) considering the strong representation of Rhodian amphorae present in earlier, Augustan, contexts.

Dressel 2–5 wine amphorae account for the second most common eastern amphora category in the region, present on 17 sites from the mid-Augustan era onwards. The Koan Dressel 2–5 (Empereur and Picon 1989; Lemaître 2002, 220–1) is present at Dangstetten, Neuss, Mainz, Chur, Windisch, and Strasbourg. Their presence in mostly Augustan forts combined with their absence from later Julio-Claudian era forts suggests that those from Mainz, Chur, and Strasbourg are similarly early and that their import came in a brief window in the Augustan period (Lemaître 2002, 220–1). These amphorae are found at the Trajanic civitas capital of Dieburg as well as the second century villa at Bad Kreuznach, with these sites representing the latest examples from the study region. In most cases the exact origin of the Dressel 2–5 form is not clear, with reports only specifying an eastern origin.

The carrot-shaped Cam 189 was the third most common form (excluding those amphorae generically categorized as 'eastern Mediterranean'), present on 12 sites, from the second camp at Neuss, camp A at Oedenburg, Rottweil, and Nijmegen and then all the major civilian centres of

the region – Mainz, Augst, Strasbourg, Avenches, Xanten, and Nida-Heddernheim. This form probably carried dried fruit from the Levantine coast (Vipard 1995, 61–3; Vilvorder *et al.* 2000, 480–1; Reynolds 2005, 571; Howells 2009). The closely related Kingsholm 117 is quantified only on four sites: Nijmegen, Dangstetten, Rödgen, and Augst, in much earlier levels than have been documented elsewhere in the northwestern provinces (Vilvorder *et al.* 2000, 481), though similarities to the Cam 189 form may again perhaps cause problems of misidentification in publications. The fourteen other forms, present in far smaller quantities, come from a variety of sources around the Eastern Mediterranean. Amphorae came from the islands of Crete, Cos, Chios, and Cnidos, and from the coastlines of the Levant and southern Turkey. Most of these amphorae probably carried wine, though with some forms there is no agreement amongst specialists as to their normal contents.

6. Consumption patterns by site type

These eastern products were consumed in different locations throughout the region. Since the distribution of published material is a result of modern archaeological practice rather than ancient trading reality, discussion of micro-regional patterns is inappropriate for these data. We can, however, consider the types of sites where eastern amphorae are found. Using the very general categories of military, settlement, and villa, we can see that while there are more military sites documented than either of the other, settlement sites actually account for a higher percentage of the total amphorae finds. Settlements present 57% of the total amphorae data, and 66% of the eastern amphorae, while military sites account for 42% of total amphorae and 33% of eastern. Villas are poorly represented, accounting for only 2% of the total dataset and 1% of the eastern data. Given the small size of the overall sample that comes from villas (10 MNI), the following discussion of consumption only focuses on the larger assemblages from settlements and military sites.

Settlement sites show the largest diversity of amphora types, though are still dominated by Cam 184 and Dressel 2–5 (Table 3). Forms from settlements are dominated by the RBH quantification of Mainz and Augst, where the high counts of diagnostic sherds of Cam 184 and Dressel 2–5 have a significant influence over the shape of the graph. The same pattern is true, however, when the sites quantified by MNI are considered, suggesting that we would see similar patterning if Augst and Mainz were able to be re-quantified. The amphorae from Waldgirmes, the lone settlement site quantified by maximum number of amphorae, still show the dominance of Cam 184 and Dressel 2–5 forms. Generically classified 'eastern Mediterranean' amphorae are also a prevalent category, though less easy to discuss because of the ambiguity of this label.

Military sites show less overall diversity in amphora type, but maintain the same popularity of Cam 184 and Dressel 2–5. This suggests that soldiers had less access to the full range of eastern products present along the Rhine frontier, though these data may well be influenced by the predominance of Augustan-period forts, and could be changed by more evidence from later Julio-Claudian or Flavian military installations were it available.

Perhaps the most important detail to take away from the assemblages between military and settlement sites is, however, their similarities. Both in quantities and contents, there are not significant differences between military and civilian consumers. Most importantly, the Rhodian Cam 184, once thought to have been brought to the region as a Claudian form of taxation to provision the military (Peacock 1977, 270), is as common on civilian sites. Peacock could not have known this based upon the state of publication at the time, and it may be plausible that the date of such a tax should be moved earlier, to the Augustan period.

The similarities apparent here bring in to question the nature of the relationship between military supply networks and civilian market economies. This question cannot be answered based on eastern amphorae alone, as they represent such a small percentage of the total quantity of amphorae-borne goods consumed in the region. It is clear, however, that at least this small dataset does not show significant differences between the two groups, which strongly suggests that, regardless of how the goods arrived to the region, they were widely available to military and non-military markets alike.

7. Chronology

Determining chronological change in importation is not possible for all sites included in this dataset. That said, Augst, Avenches, Strasbourg, and Metz have been phased and many military sites can be closely dated due to short occupations. Relying on these sites, we can gain some idea of the chronology of eastern imports to sites along the Rhine.

Eastern amphorae first appear at sites along the Rhine in the earliest phases of Roman occupation. At Basel Münsterhügel, a Rhodian amphora appears in the early Augustan phase 30–16 BC (Deschler-Erb 2008, 183–4); at Vindonissa, Dressel 2–5s appear in early Augustan phases and Rhodian amphorae in mid-Augustan (Martin-Kilcher 2003, 352, 354), the assemblages of the first camp at Neuss (16–12 BC) contained Rhodian amphorae (Carreras Monfort and González Cesteros 2013, 283), and the legionary fortress at Dangstetten (15–8 BC) contained Rhodian, Dressel 2–5s, and Kingsholm 117s (Ehmig 2010, 36). Other closely dated Augustan forts at Rödgen and Höchst (Ehmig 2007a, 40), Winsum (Galestin 2003, 448), and Vechten (van der Werff 2004, 296) show the widespread consumption of eastern products at this time,

as do contemporary phases at the civilian settlement of Augst (Martin-Kilcher 1994, 491) and Metz (Baudoux 1996, 150–6).

The Julio-Claudian forts at Oedenburg (camp A, AD 30–70) (Viroulet and Baudoux 2009, 176) and Velsen (AD 10–48) (Goudswaard 1990) show sustained importation of eastern goods. Eastern amphorae are also found in Julio-Claudian phases at Strasbourg-Koenigshoffen (Baudoux 1996, 153–5) and Augst (Martin-Kilcher 1994, 490–1). Eastern imports peak at Augst between AD 30 and AD 50 (Martin-Kilcher 1994, 490–1). The base of the Classis Germanicus at Köln-Alteburg, founded probably in the late Tiberian period, produced few fragments of Rhodian amphorae, though their exact phasing is unclear (Hanel 2003, 362).

Finds dwindle by the Flavian period, with few sherds found thus far at the Vespasianic civitas capital at Worms (Ehmig 2007a, 40), forts at Gross-Gerau or Hofheim (Ehmig 2007a, 41), or at Rottweil (Franke 2003, 133–4). The Kops Plateau in Nijmegen produced eastern material through to the end of its habitation in AD 69/70 (Van der Werff 1984; Carreras Monfort and van den Berg 2017, 133–50). The Trajanic civitates of Dieburg and Nida-Heddernheim produced ten eastern amphorae between them (Ehmig 2007a, 40), while the contemporaneous fort at Heldenbergen produced only one (Ehmig 2007a, 41). No eastern products were recovered from other Trajanic forts at Hanau or Albstadt (Ehmig 2007a, 41), Hesselbach (Batz 1973, 106–8), or Walheim (Carreras Monfort 2004, 508).

No eastern forms were recovered from second century layers at Metz (Baudoux 1996, 151), and none date past the Trajanic period at Strasbourg-Koenigshoffen (Baudoux 1996, 155). At Augst, eastern products register at less than 1% of the assemblage from *c* AD 110 onwards. One Dressel 43/Crétoise 4 amphora was recovered from late second century contexts at Voorburg/Forum Hadriani (van Kerckhove 2014, 349). Excavations in the villa at Bad Kreuznach, built in the second quarter of the second century AD and inhabited until *c* AD 260, found both Kāpitan II and Late Roman 1 amphorae (Ehmig 2005, 191; 2007a, 42). The Kāpitan II are also known from the fort at Niederbieber (Oelmann 1914, 65), built in the final quarter of the second century and inhabited until AD 260 (this assemblage is not quantified, and is therefore not included in the Tables or Fig. 1).

It is not until the early fourth century that eastern forms again appear in quantified assemblages. Late Roman 4 amphorae were recovered from the Trier Kaiserthermen (Hussong and Cüppers 1972), and a single Augst 47 from the Valentinian fort at Breisach (Zagermann 2010, 142). At Kaiseraugst, Late Roman 1, Late Roman 4, Kāpitan I and II, and Augst 46 and 47 were recovered (Martin-Kilcher 1994, 491). Excavations at Mainz documented Kāpitan II, Late Roman 1, and Augst 53 amphorae in small quantities, though their exact phasing is unclear (Ehmig

2003, 41). Broadly dated contexts of the third and fourth centuries at Metz contained Kāpitan II amphorae, as did Strasbourg-Koenigshoffen (Baudoux 1996, 155).

In total, these sites demonstrate an early rise in eastern imports that peaked sometime in the early Julio-Claudian period and then slowly dwindled, becoming very rare in the post-Trajanic period. Some late material is present on major sites, but in small quantities. Generally speaking this fits with the wider chronology of all amphorae imports in the region; these peak in the late first century AD and then diminish into the third century. Thereafter imports become increasingly rare outside of major urban centres where even then amphorae of any origin only appear in small quantities (Martin-Kilcher 1994, 467; Ehmig 2003, 41; Schimmer 2009, 104–5). This is clearly visible at Augst, and a comparison of Dressel 20 rim forms shows that it was probably also the case at Mainz and Kempten as well (Schimmer 2009, 82).

From the beginning of the Roman period through to the middle of the third century, there is considerable variation in the origin of products imported to the region. In the earliest periods, where most of the eastern material is found, amphora-borne products were brought into the Rhine basin from all across the Roman Empire, particularly from Italy, Spain, the East, and Gaul. Over the course of the first century, Spanish material came to dominate assemblages, particularly in olive oil imports. Gallic wine became the most popular wine, pushing out most other producers by the beginning of the second century. Around the same time, locally produced containers become abundant around the central Rhine area (see Carreras Monfort and van den Berg 2017, 161–84) particularly the Dressel 20 similis (Baudoux 1996 106–12; Baudoux *et al.* 1998, 11–6; Ehmig 2003, 18; 2007a, 58–74) and the Niederbieber 74/75. These forms dominated nearly all amphora assemblages from military sites of the second and early third centuries (Oelmann 1914, 63–6; Ehmig 2007a, 39–43; Fleer 2011, 437–41) and show an increase in local productive enterprises that were able to take over a market previously held by imports (Franconi 2014, 207–11).

The eventual near-cessation of amphora imports must be considered alongside the possibility of increased usage of barrels (Marlière 2002; Ejstrup 2005; Wilson 2009; McCormick 2012), since the barrel phenomenon may obscure our understanding of imported goods. Barrels do not, however, offer a sound explanation for the decline in eastern imports, as eastern amphorae continue to be imported elsewhere in the Roman west, as in Britain (Campbell 2007; Papaioannou 2011), France (Pieri 2005), and Spain (Keay 1984).

8. Conclusions

Surveying the evidence for eastern amphorae in the Rhine basin, several conclusions can be reached. First,

most imports were received in the early Imperial period, starting under Augustus and peaking on most sites by the beginning of the Flavian period, after which they decline. Aegean wine was the main commodity imported, and it reached both military and civilian sites throughout the region. A fairly wide variety of forms was present, more than twice the number previously documented in northern Gaul by Vilvorder *et al.* (2000). The appearance of Late-Roman forms in southern Gaul and Britain (see studies by Pieri 2005; Campbell 2007; Papaioannou 2011) with only minimal amounts along the Rhine suggests that the German frontier was either no longer interested in consuming eastern amphora-borne commodities, or no longer had access to them.

Why the decline in eastern goods beyond the first century AD? To answer this question we must look to the more popular products consumed within the Rhine basin, particularly wine. Early phases on sites saw a wide selection of wine being consumed, judging from the vessel types present, coming from the East, Italy, Spain, and Gaul. This period of variety is probably due to the large demands of the military in the region at this time, where large field armies operating in Germania will have expected constant supplies. To meet these demands, goods were brought from wherever they could be found, and the influx of products to the area benefited both soldiers and the growing civilian populations around them. As the Rhine region developed this variety of imported products shrank over time. The rise in production of Gallic wine, shipped in the ubiquitous Gauloise 4 amphora, came to dominate the Rhine market from the end of the first century AD. The more exotic wines of the Aegean and eastern Mediterranean, that had to travel great distances by sea, land, and river, could not compete with the relatively close producers of southern Gaul, and so their import eventually slowed. The Gallic vineyards eventually lost this market to vineyards that developed locally along the Moselle and Rhine Rivers from the third century onwards (Brun and Gilles 2001; Brun 2005; Franconi 2014). With such abundant wine located nearby, more distant vintages became a rarity. The few documented eastern products in the Rhine of the High Empire must have brought in for the highest bidders: the elite of the area who could afford to pay the high price for rare wines from the farthest reaches of the Empire.

Acknowledgements

This research was generously supported by the Oxford Roman Economy Project and the John Fell Fund at the University of Oxford. My thanks are extended to the editor and two anonymous referees whose comments significantly improved the clarity of the original draft of this paper. Both Julie van Kerckhove and Joost van den Berg shared data and unpublished material at an early stage of this research, and I am grateful for their generosity. Finally, I thank both Candace Rice

and Andrew Wilson for their numerous discussions on the topic.

Bibliography

- Baatz, D. 1973. *Kastell Hesselbach und andere Forschungen am Odenwald limes*, Berlin.
- Baudoux, J. 1996. *Les Amphores du Nord-Est de la Gaule (territoire français): Contribution à l'histoire de l'économie provinciale sous l'Empire romain*, Paris.
- Baudoux, J. 1998. Les Amphores à Strasbourg: Fouilles récentes du tramway (homme de fer) et de la rue Hannong, in F. Laubenheimer (ed.) *Les Amphores en Gaule 2: Production et Circulation*, Paris, 91–105.
- Baudoux, J., Bocquet, A., Brulet, R., Laubenheimer, F., Marlière, E. and Vilvorder, F. 1998. La production des amphores dans l'est et le Nord des Gaules: typologie et caractérisation physico-chimique, in F. Laubenheimer (ed.) *Les Amphores en Gaule: Production II: Production et Circulation*, Paris, 11–48.
- Brughmans, T. and Poblome, J. 2016. Roman bazaar or market economy? Explaining tableware distributions through computational modelling, *Antiquity* 90, 393–408.
- Brun, J.-P. 2005. *Archéologie du vin et de l'huile en Gaule romaine*, Paris.
- Brun, J.-P. and Gilles, K.-J. 2001. La viticulture antique en Rhénanie, *Gallia*, 58, 165–79.
- Campbell, E. 2007. *Continental and Mediterranean Imports to Atlantic Britain and Ireland, AD 400–800*, York.
- Carreras Monfort, C. 2004. Report on the amphorae from Walheim, in K. Kortüm (ed.) *Walheim I: Das Kastell II und die nachfolgende Besiedlung*, Stuttgart, 507–15.
- Carreras Monfort, C. 2006. A quantitative approach to the amphorae from Xanten: a more comprehensive view of the long-distance Roman trade, *Xantener Berichte*, 14, 25–39.
- Carreras Monfort, C. and van den Berg, J. (eds) 2017. *Amphorae from the Kops Plateau (Nijmegen): Trade and Supply to the Lower-Rhineland from the Augustan Period to AD 69/70*, Oxford.
- Carreras Monfort, C. and Berni, P. 2015. Hispanic imports in the first military camps of Novaesium (Neuss): Lager 1–7 (Augustus-Flavians), *Marburger Beiträge zur antiken Handels-, Wirtschafts-, und Sozialgeschichte*, 32, 173–208.
- Carreras Monfort, C. and González Cesteros, H. 2013. Las ánforas de los Campamentos de Neuss (Renania, Alemania), in D. Bernal, L.C. Juan, M. Bustamante, J.J. Díaz and A.M. Sáez (eds) *Hornos, Talleres, y Focos de Producción Alferera en Hispania*, Cádiz, 281–97.
- Cooper, A. and Green, C. 2016. Embracing the complexities of 'big data' in archaeology: the case of the English Landscape and Identities project, *Journal of Archaeological Method and Theory*, 23(1), 271–304.
- Deschler-Erb, E. 2008. *Basel-Münsterhügel am Übergang von späteltischer zu römischer Zeit: Ein Beispiel für die Romanisierung im Nordosten Galliens*, thesis, University of Zurich, Faculty of Arts, Zurich.
- Ehmig, U. 2003. Die römischen Amphoren aus Mainz, *Frankfurter Archäologische Schriften*, 4, Möhnesee.
- Ehmig, U. 2005. Der Besitzer der Bad Kreuz nacher Peristyl villa – ein Händler ostmediterraner Lebensmittel?, *Münstersche Beiträge zur Antiken Handelsgeschichte*, 24(2), 175–91.
- Ehmig, U. 2007a. Die römischen Amphoren in Umland von Mainz, *Frankfurter Archäologische Schriften* 5, Wiesbaden.
- Ehmig, U. 2007b. Tituli picti auf Amphoren in Köln, *Kölner Jahrbuch*, 40, 215–322.
- Ehmig, U. 2009. Tituli picti auf Amphoren in Köln II, *Kölner Jahrbuch*, 42, 393–446.
- Ehmig, U. 2010. *Dangstetten IV: die Amphoren. Untersuchungen zur Belieferung einer Militäranlage in augusteischer Zeit und den Grundlagen archäologischer Interpretation von fund und befund*, Stuttgart.
- Ehmig, U. 2015. Die Amphoren funde, in A. Becker and G. Rasbach (eds) *Waldgirmes: die Ausgrabungen in der spätaugusteischen Siedlung von Lahnau-Waldgirmes (1993–2009). Band I: Befunde und Funde*, Darmstadt, 273–86.
- Ejstrud, O. 2005. Size matters: estimating trade of wine, oil, and fish-sauce from amphorae in the first century AD, in T. Bekker-Nielsen (ed.) *Ancient Fishing and Fish Processing in the Black Sea Region*, Aarhus, 171–82.
- Empereur, J.-Y. and Picon, M. 1989. Les régions de production d'amphores d'époque impériale en Méditerranée orientale, in *Amphores Romaines et Histoire Économique: Dix ans de Recherche. Actes du colloque de Sienne, mai 1986*, Rome, 223–48.
- Ettlinger, E. and Simonett, C. 1952. *Römische Keramik aus dem Schutthügel von Vindonissa*, Basel.
- Fleer, K.C.H. 2011. *Das Kastell Haselburg*, Stuttgart.
- Franconi, T.V. 2014. *The Economic Development of the Rhine River Basin in the Roman Period (30 BC–AD 406)*, DPhil Thesis, University of Oxford.
- Franke, R. 2003. *Arae Flaviae 5. Die Kastelle I und II von Arae Flaviae/Rottweil und die römische Okkupation des oberen Neckar gebietes*, Stuttgart.
- Galestin, M.C. 2003. Winsum-Bruggeburen, second report on the excavation. The Roman pottery, *Palaeohistoria*, 43/44, 435–67.
- González Cesteros, H. and Tremmel, B. 2011–12. Aceite, vino, y salazones Hispanos en Oberaden/Spanish olive oil, wine, and salted products in Oberaden, in *Anales de Prehistoria y Archeología*, 27–28, 527–42.
- González Cesteros, H. and Tremmel, B. 2015. Les importations d'amphores dans le camp légionnaire d'Anreppen (Westphalie, Allemagne), *SFÉCAG: Actes du Congrès de Nyon 14–17 Mai 2015*, 343–52.
- Goudswaard, B. 1990. *Amforen van Velsen 1. Inhoud aan de verpakking: een materiaalstudie naar bevoorrading*, Doctoraalscriptie Universiteit van Amsterdam.
- Hanel, N. 2003. Die amphoren der Ausgrabungen 1998 im Hauptstützpunkt der Classis Germanica 'Alteburg' bei der Colonia Claudia Ara Agrippinensium – ein Vorbericht, *Rei Cretariae Romanae Fautorum Acta* 38, 361–4.
- Höpken, C. 2013. Amphoren aus Köln: Ein Beitrag zu Wirtschaftsverbindungen Niedergermaniens in der römischen Kaiserzeit, *KuBA*, 3, 103–8.
- Howells, D.T. 2009. Consuming the exotic: carrot amphorae and dried fruit in early Roman Britain, *Journal of Roman Pottery Studies*, 14, 71–81.
- Hussong, L. v. and Cüppers, H. 1972. *Die Trierer Kaiserthermen: Die spätrömische und frühmittelalterliche Keramik*, Trier.
- Keay, S.J. 1984. *Late Roman Amphorae in the Western Mediterranean: A typology and economic study: the Catalan Evidence*, BAR International Series, 196, Oxford.

- Laubenheimer, F. and Marlière, É. 2010. *Échanges et vie économique dans le Nord-Ouest des Gaules (Nord/Pas-de-Calais, Picardie, Haute-Normandie): le témoignage des amphores du II^e s. av. J.-C. au IV^e s. ap. J.-C.*, Besançon.
- Lemaître, S. 2002. Recherche sur la diffusion en Gaule des amphores produites dans le sud-ouest de l'Anatolie, à l'époque impériale, in F. Blondé, P. Ballet and J-F. Salles (eds) *Céramiques hellénistiques et romaines. Productions et diffusion en Méditerranée orientale (Chypre, Égypte et côte syro-palestinienne)*, Lyon, 213–26.
- Loeschcke, S. 1909. *Keramische Funde in Haltern*, Bonn.
- Loeschcke, S. 1942. Die römische und die belgische Keramik aus Oberaden, in C. Albrecht (ed.) *Das Römerlager in Oberaden*, Dortmund, 58–115.
- Marangou-Lerat A. 1995. Le vin et les amphores de Crète de l'époque classique à l'époque impériale, *Études Crétoises*, 30, De Boccard.
- Marlière, É. 2002. *L'outre et le tonneau dans l'occident romain*, Montagnac.
- Martin-Kilcher, S. 1987. *Die römischen Amphoren aus Augst und Kaiseraugst: ein Beitrag zur römischen Handels- und Kulturgeschichte. Vol. I: Die südspanischen Ölamphoren (Gruppe 1)*, Forschungen in Augst Bd. 7.1, Augst.
- Martin-Kilcher, S. 1991. Die Amphoren, in A. Hochuli *et al.* (eds) *Chur in römischer Zeit II*, Basel, 119–27.
- Martin-Kilcher, S. 1994. *Die römischen Amphoren aus Augst und Kaiseraugst: ein Beitrag zur römischen Handels- und Kulturgeschichte. Vol. II: Die amphoren für Wein, Fischsauce, Südfrüchte (Gruppen 2–24) und Gesamtauswertung. Vol. III: Archäologische und Naturwissenschaftliche Tonbestimmungen und Katalog und Tafeln (Gruppen 2–24)*, Forschungen in Augst Bd. 7.2–3, Augst.
- Martin-Kilcher, S. 2003. Wein-Olivenöl-Fischsaucen: Amphoren aus den stratifizierten Befunden der 1. und 2. Holzbauperiode, in A. Hagendorn *et al.* (eds) *Zur Frühzeit von Vindonissa*, Brugg, 351–60.
- McCormick, M. 2012. Movement and markets in the first millennium: information, containers, and shipwrecks, in C. Morrisson (ed.) *Trade and Markets in Byzantium*, Washington D.C., 51–98.
- Meylan-Krause, M.-F. 1995. La céramique, in P. Blanc *et al.* (eds) *Recherches sur les quartiers nord-est d'Aventicum*, *Bulletin de l'Association Pro Aventico*, 37, 5–112.
- Niemeijer, R.A.J. 2006. *Het Romeinse Gedraaide Aardewerk van de Nederzetting Leidsche Rijn-Hogeweide*, Auxiliaria 5, Nijmegen.
- Oelmann, F. 1914. *Die Keramik des Kastells Niederbieber*, Frankfurt am Main.
- Papaioannou, T. 2011. A reconstruction of the maritime trade patterns originating from western Asia Minor during Late Antiquity, on the basis of ceramic evidence, in D. Robinson and A. I. Wilson (eds) *Maritime Archaeology and Ancient Trade in the Mediterranean*, Oxford, 197–210.
- Peacock, D.P.S. 1977. Roman amphorae: typology, fabric, and origin, in G. Vallet (ed.) *Méthodes classiques et méthodes formelles dans l'étude typologiques des amphores*, Publications de l'Ecole française de Rome, Rome, 32.1, 261–78.
- Peacock, D.P.S. and Williams, D.F. 1986. *Amphorae and the Roman Economy: An introductory guide*, London.
- Pieri, D. 2005. *Le Commerce du Vin Oriental à l'Époque Byzantine (Ve–VII^e siècles) Le témoignage des amphores en Gaule*, Beyrouth.
- Reynolds, P. 2005. Levantine amphorae from Cilicia to Gaza: a typology and analysis of regional production trends from the 1st to 7th centuries, in J.M. Gurt Esparraguera *et al.* (eds) *LRCW 1: Late Roman Coarse Wares, Cooking Wares, and Amphorae in the Mediterranean. Archaeology and Archaeometry*, BAR International Series, 1340, 563–611.
- Ritterling, E. 1913. *Das frühromische Lager bei Hofheim im Taunus*, Wiesbaden.
- Schimmer, F. 2009. *Amphoren aus Cambodunum/Kempten: ein Beitrag zur Handelsgeschichte der römischen Provinz Raetia*, Wiesbaden.
- Stuart, P. 1963. *Gewoon aardewerk uit de Romeinse legerplaatsen en de bijbehorende grafvelden te Nijmegen*, Leiden.
- Unverzagt, W. 1916. *Die Keramik des Kastells Alzei*, Frankfurt am Main.
- Van den Berg, J. 2012. Rare and exotic amphorae in North-West Europe: finds from the Roman fort on the Kops Plateau, Nijmegen, *Journal of Roman Pottery Studies*, 15, 215–34.
- Van der Werff, J.H. 1984. Roman amphoras at Nijmegen: a preliminary report, *Berichten van de Rijksdienst voor het Oudheidkundig Bodemonderzoek*, 34, 347–87.
- Van der Werff, J.H. 2003. The third and second lives of amphoras in Alphen aan den Rijn, The Netherlands, *Journal of Roman Pottery Studies*, 10, 107–16.
- Van der Werff, J.H. 2004. Amphoras from Vechten (excavations 1946–47), in F. Vermeulen, K. Sas and W. Dhaeze (eds) *Archaeology in Confrontation: Aspects of Roman military presence in the northwest. Studies in Honour of Prof. Em. Hugo Thoen*, Gent, 287–304.
- Van Kerckhove, J. 2014. Het Romeinse aardewerk, in M. Driessen and E. Besselsen (eds) *Voorburg-Arentsburg, Een Romeinse havenstad tussen Rijn en Maas*, (Themata 7), Amsterdam, 321–472.
- Vilvorder, F., Symonds, R.P. and Rekk, S. 2000. Les amphores orientales en Gaule septentrionale et au sud-est de la Grande-Bretagne, *Rei Cretariae Romanae Fautorum Acta* 36, 477–86.
- Vipard, P. 1995. Les amphores carottes (forme Schöne-Mau XV). Etat de la question, in *SFÉCAG: Actes du Congrès de Rouen 25–29 Mai 1995*, Marseilles, 51–77.
- Viroulet, B. and Baudoux, J. 2009. La céramique des camps, in M. Reddé (ed.) *Odenburg: fouilles françaises, allemandes et suisses à Biesheim et Kunheim, Haut-Rhin, France. Les Camps militaires Julio-Claudiens*, Mainz, 169–229.
- Wilson, A.I. 2009. Approaches to quantifying Roman trade, in A.K. Bowman and A.I. Wilson (eds) *Quantifying the Roman Economy: Methods and Problems*, Oxford, 213–49.
- Zagermann, M. 2010. *Der Münsterberg in Breisach. III. Die römerzeitlichen Befunde und Funde der Ausgrabungen Kapuzinergasse (1980–1983), Rathausenerweiterung, Tiefgaragenneubau (1984–1986) und der baubegleitenden Untersuchungen am Münsterplatz (2005–2007)*, München.

Roman pottery in ritual contexts: types, fabrics and manipulations

Constanze Höpken and Manuel Fiedler

Abstract

This paper considers the character of pottery types at cultic sites and in ritual groups, and how the nature of the pottery can point to such activities. Some vessel types are more indicative of such activities than others given their form and attributes, but 'everyday' pottery can also occur at such sites and contexts. Particularly diagnostic are vessels with snake decoration and incense burning forms, as well as siphons and vessels with perforated rims which were fashioned for such specific uses. Where pottery types of more 'everyday' nature occur in cultic contexts certain features and attributes potentially highlight their ritual use. A degree of caution is required and assumptions should be avoided. Often the features and attributes occur in association or alongside other evidence in the formation of the deposit which can lead to the interpretation of a deposit as related to ritual and cult.

Keywords: German and Danubian provinces, archaeology; Roman period; pottery types, pottery use, pottery deposition; ritual; cult

1. Introduction

It has long been debated how pottery and small finds can help to identify deposits with a ritual and cultic background, and if this material can suitably assist in the reconstruction of ritual activities that took place at cult-places and foci. Often, at first appearance, most of the finds do not differ from what may occur in everyday settlement refuse groups. Nevertheless, recent detailed analyses have shown that finds from ritual contexts can bear special characteristics (cf Höpken 2015; Höpken and Fiedler 2015).

In ritual contexts, particularly in the remnants of religious feasts and banquettes, two types of pottery can be distinguished: cult vessels and ordinary crockery. Both show special distinguishing features by which we may determine and characterize specific ritual contexts.

2. Vessels made for use in belief, cult and ritual

2.1 Introduction

The first group – unique cult vessels – show special shapes and/or decoration, such as snake pots or incense burners (Fig. 1). In these cases the snake symbolizes the divine and chthonic character of the rituals and the activities which the vessels were used for. Those vessels with a special

shape can occur without snake decoration but are always (as far as is known to date) connected with ritual activities, while on the other hand the snake decorated vessels show a wide range of shapes, though the shape itself may not be restricted to ritual and cult.

2.2 Snake decorated vessels

The most common snake decorated vessel type is the crater, a wine-mixing vessel designed to hold the equivalent of several litres in volume (Fig. 1 no. 2). The snakes usually crawl over the handles, up to the rim, and seem to 'nip' from the content. Sometimes the snakes are combined with other reptiles and amphibians, like lizards, frogs or tortoise (for example Ulbert 1963; Schmid 1991, 23–5, pl. 24 no. 208; Gassner 2004, 234, fig. 6).

This vessel type is of Mediterranean origin (Hilgers 1969, 52–3) and occurs rarely in regular household rubbish/discard contexts in the north-west provinces, but is often present in ritual contexts, where it is mainly found broken and scattered, and less often deposited as a whole item (for example Jacobi 1913; Matei 1982; Gassner 1990; Rusu-Bolindeț 1993; Prammer 1995; Schmotz 2000; Höpken 2004; Martens 2004; Gleirscher 2011; Humer and Kremer 2011; Höpken 2014). Single vessels have been found in military contexts or graves (Eisenmenger

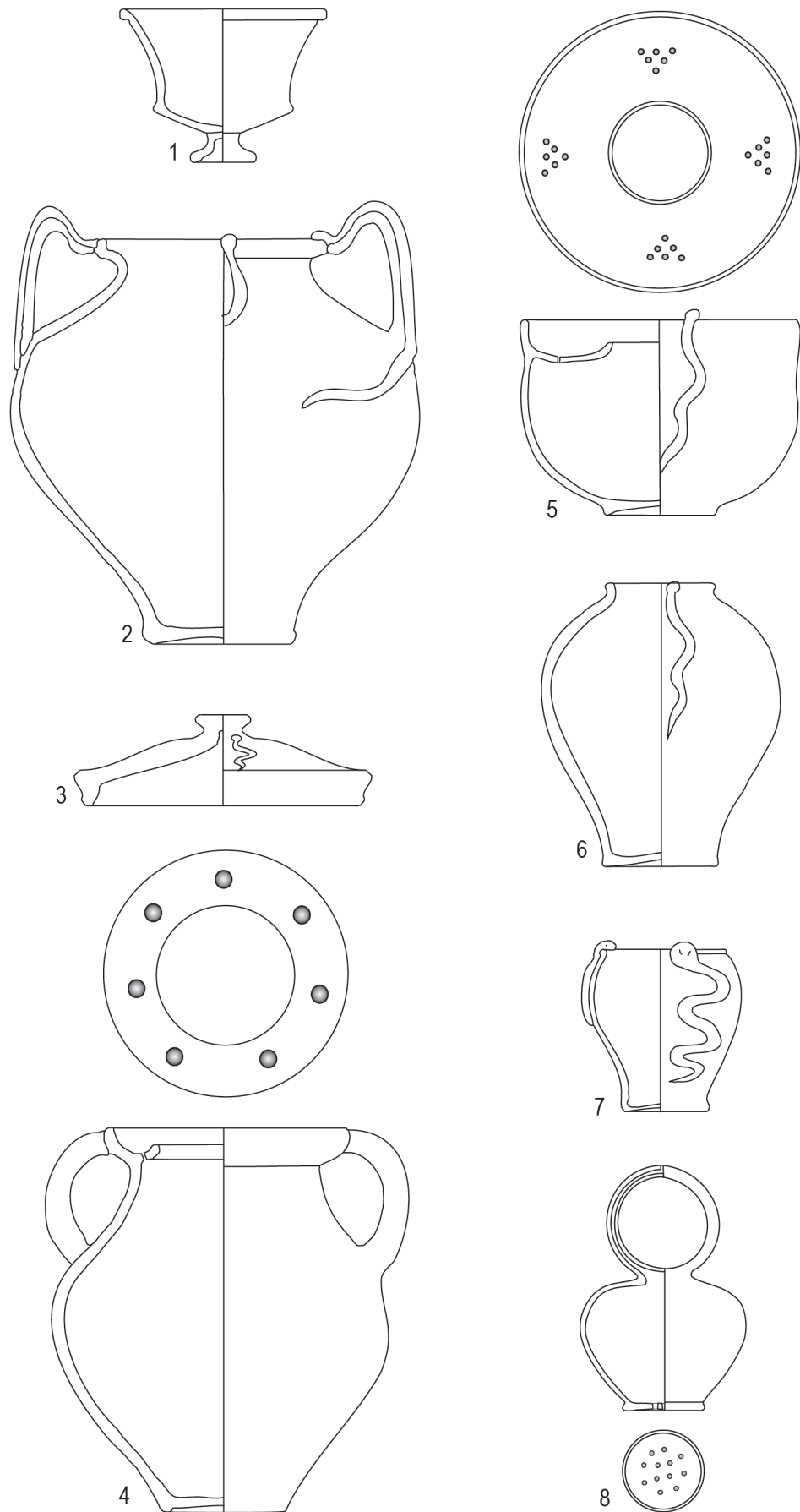


Figure 1. Snake-decorated vessel types: 1. turibulum, 2. crater, 3. lid, 4. pot with perforated rim, 5. sieving bowl, 6. tonnelet, 7. pot, 8. siphon.

and Eleftheriadou 2000; Ruprechtsberger 1980, 38–9, pl. 1.1–2; Alexandrescu 2007). The distribution of such types within the Roman Empire includes Italy (for example Vermaseren and van Essen 1965, 390–2; Collins Clinton 1977, pl. 18–22; Scott 1992; Bird 1996, 124), the German and Danubian provinces (German provinces: Binsfeld 1960/61; Filtzinger 1972, pl. 45; Ristow 1974, 20–1; Huld-Zetsche 1986; Siepen and Pirling 2006, 38; Danubian provinces: Kellner 1960, 135; Ulbert 1963; Rusu-Bolindeț 1993; Prammer 1995; Höpken 2004, 245), and Britain (Bird 1996).

Other vessel types that are less or not restricted to ritual contexts occur with snake decoration, but are rare; for example a single white dish with a red snake crawling on the rim was found in Friedberg (Biegert 1999, 188, 271, pl. 79.2) and an individual snake decorated mortarium is known from Trier (Pfahl and Thiel 2006/7). In Apulum occur humps, together with snakes, on amphoroid vessels and pots (Fiedler 2014, 193, fig. 11). The only example of a sieving bowl with a snake decoration was excavated in Straubing (Fig. 1 no. 5); it shows additionally other reptiles (Höpken 2014). This type is connected to the pots with a perforated rim (see below); a vessel found in *Carnuntum* is representative of the transition (Gassner 2004, 233, fig. 5b). Occasionally lids were decorated with snakes as well (Fig. 1 no. 3) (Martens 2004, 36, fig. 9.2; Höpken 2015, 164) and also some other uncommon pots might be expected to bear this type of decoration (Rageth 1994, 164; van Kerckhove and Boreel 2014, 267–8, fig. 9.833). Simple pots with snake decoration are somewhat special: a distinctive group of so-called tonnelets is known in Augst (Fig. 1 no. 6) which can probably be connected to a Celtic goddess (Schmid 1991). Single vessels of this type were found in Rottenburg and Schwäbisch Gmünd (Gaubatz-Sattler 1999, 344; Boosen 2005, 43). Other simple pots (Fig. 1 no. 7) were found in graves, for example in Wilten and Isérables (Stähelin 1948, 552–3; Völkl 1950, 31–6; Siepen and Pirling 2006, 37–8; Alexandrescu 2007, 52).

2.3 Vessel types restricted to ritual activities

Cult vessels that can be determined by shape include incense burners (Fig. 1 no. 1), pots with a perforated rim (Fig. 1 no. 4) and siphons (Fig. 1 no. 8). Occasionally they show snake decorations. Even when incense burners are found in domestic contexts – most probably as remains of domestic cult activities – these vessels occur more or less in what can be defined as restricted ritual contexts.

Siphons

The siphon (Fig. 1 no. 8) was used to lift liquids from a big vessel, such as a crater (Höpken and Fiedler 2014). The bottoms are perforated and the ring shaped handle is hollow, bearing a little hole on top. The type is already known from Classical Greece; a Roman specimen from Cologne is decorated with two snakes, winding



Figure 2. Snake-decorated siphon handle found near a mithraeum in Cologne, Germany.

around the ring handle and nipping from a crater in the centre (Höpken and Fiedler 2014, 371 cat C3) (Fig. 2). Occasionally the type is glazed.

Vessels with perforated rims

Pots with a perforated rim (Fig. 1 no. 4) were probably used to mix wine as well as this being a function of vessels such as craters (Höpken 2015, 163–4); traces of soot have led also to an interpretation as incense burners (Bird 2001; Huld-Zetsche 2008, 96). The vessels from Stockstadt and Cologne show snakes combined with other animals, such as, scorpion, raven and lion (Ristow 1974, 20, pl. XIII; Stade 1933, pl. 6 fig. 4.1). Also plain vessels of this type, as so far known, occur only in ritual contexts. Several are connected to Mithraea (Stade 1933, pl. 6, fig. 4.1; Thomas 2004, 205, fig. 8; Ristow 1974, 20, pl. XII; Schmotz 2000, 135–6, fig. 16) and some in Straubing to Sabazios (Höpken 2014, 213, fig. 4.7).

Incense burners

The most frequent vessel type associated to ritual activities is the *turibulum*, the incense burner (Fig. 1 no. 1). They

can be found in domestic and military sites (Drexel 1911; Oelmann 1914; Höpken 2003, 730) as well as at sanctuaries (for example, Nickel 1999; Martens 2004; Höpken 2004; Fiedler 2005; and many more instances). The bowls were used to burn incense or other votive substances/offerings or to display offers like fruits or liquids; the smaller ones might also have been used as lamps (Hilgers 1969, 82-3; Mihailescu-Bîrliba 1996; Fiedler and Höpken 2004). Snake decorated specimens were found in Trier, Friedberg and Nijmegen (Schwinden 1987, 281-2, fig. 5; Huld-Zetsche 1986, 13, fig. 4; Horn 1994, 56, fig. 21).

3. Everyday pottery in ritual contexts

3.1 Introduction

The second group of pottery found in ritual contexts does not differ from the pottery used in daily life. If clear signs of a cultic context, for instance, with a find-spot in a sanctuary, association with cult pottery, ritual dedication graffiti, etc., are lacking, nonetheless some criteria based on analyzed cult pits/groups can help to identify ritual contexts: the selection of pottery types and fabrics, the preservation of ceramic vessels, certain fracture patterns and vessel manipulation, that is to say alteration or some form of processing. In addition, often there are unusual objects in these contexts associated with the 'ordinary' pottery.

3.2 The spectrum of vessels

The range of vessel types often differs little from that used in daily life (for example, as at the Riegel and Carnuntum-mithraea (Heyner 2013, 263, fig. 181a; Gugl and Kremer 2011, 170-1), the deposits in Kohlunden and Crevans (Czys and Scholz 2013, 362, fig. 9; Tisserand and Mouton-Venault 2012), the Straubing and a Carnuntum-pit (Höpken 2014; Gassner 2013)), but some features may be typical for cultic contexts. Accumulations of certain vessel forms may be indicative. In general, the spectrum of cultic contexts is often dominated by drinking vessels, which helps in reconstructing festive activities. For example, the contents of a closet associated with a Lararium shrine in Oberwinterthur consisted of drinking vessels and table ware; cooking ware, however, was lacking (Ebnöther and Kaufmann Heinemann 1996, 246). In large numbers drinking vessels were present in cult pits in Tienen (Martens 2004, 32-4) and Straubing (Höpken 2014, 206).

Often with site deposits that have a ritual dimension there are many similar vessels of local origin present, such as cups or beakers, plates or bowls, including wasters (Fiedler 2005, 98, fig. 3; Höpken 2014, 206): a vessel does not need to be functional in such circumstances because its importance to the activity was, potentially, only that it be laid down; it had a representative function and served visibly as a gift.

3.3 Selecting specific vessel types

Vessels of Mediterranean tradition appear above average in provincial Roman contexts with cultic background, especially craters and kantharoi. Both forms were uncommon within the domestic pottery in the north-west provinces, but they are found in ritual pits near or in sanctuaries, such as in Zugmantel, Verulamium or Apulum (Fig. 3) (Jacobi 1913, 34, 87, fig. 13; Wheeler and Wheeler



Figure 3. Deposit consisting of a katharos covered with a 'lid', excavated at the sanctuary of Liber Pater, Alba Iulia, Romania.



Figure 4. Large turibulum (max. preserved diameter 30cm) with multiple white coating and cut-off rim, excavated at the sanctuary of Liber Pater, Alba Iulia.

1936, 192–3, fig. 33 no. 48; Fiedler 2005). Also common in cult complexes are special and extraordinary vessels or objects; a case in point are so-called chimney pots in Dieburg (Porzenheim and Schallmayer 1999, 555, fig. 16 no. 557, fig. 17 no. 559, fig. 18, 562–4, figs 19–21) or Faimingen (Eingartner *et al.* 1993, 208–9) or in various shrines in Dacia (Höpken and Fiedler 2011). However, they are not restricted to cultic complexes (Höpken and Niemeijer 2013, 372) and seem to be also characteristic of baths.

3.4 Range of fabrics

In general, any type of pottery product can be found as part of a cultic group or assemblage. However, it is striking that locally produced glazed pottery, which is comparatively rare in Roman settlement contexts, occurs in cultic contexts with relative frequency. This relates especially to lamps and cult vessels (Sagui 2004, 170, fig. 9; Witteyer 2003, 11, fig. 12). The latter were most probably purposefully ordered from workshops; for the other glazed vessels it can be assumed that they were also commissioned.

Often vessels in ritual contexts have a white coating; probably this should be thought of as aiming to suggest a different, more valuable material, was in use, like marble or limestone, given that visible display will have been significant in such scenarios. Repeated whitening, as indicated by several coats, is detectable on some incense burners in Apulum (Fig. 4), showing a long lifetime for these items (Höpken 2004, 244, fig. 4; Fiedler 2014, 191, fig. 8).

3.5 Decoration

Some decoration schemes occur frequently on vessels found in sanctuaries or remained limited to these types. Undoubtedly this is true with the snakes, which are sometimes combined with reptiles, amphibians and other creatures that can be connected with cult activities. Less clear are incised or painted trees (Fig. 5 no. 4) or palm leaves (Fiedler 2005, 114, fig. 13.1; Huld-Zetsche 2008, 96–7, 237–40, pl. 89–92; on a snake vessel in Mainz: – Imperium der Götter 2013, 259 cat. 178) or cut openings in incense burners, so-called chimney pots or ceramic altars (Fiedler 2005, 102–3; Höpken 2012) (respectively Fig. 5 nos 1–3, and 5a and 5b).

3.6 Sizes of vessels

Large or small sized items, or miniature forms ('miniatures'), can be conspicuous as they differ in proportion from what we encounter as the 'normal' object size, either smaller or larger than is suitable for purpose and function. Large sized vessels could be used in general in a wider context, for example, as drinking vessels with a large volume of content for shared consumption at a group gathering. Smaller-sized objects symbolize a normal-sized item; such miniatures are often regarded as children's toys,

but this is rarely confirmed by find contexts. Unusual vessel size can be seen to be associated with environments where ritual took place.

Large sized vessels: Incense burners with a rim diameter of about 30 cm are found exclusively in sanctuaries (Höpken 2004, 242, fig. 2; Fiedler 2005, 101–3, fig. 7; see here Fig. 4); it has been suggested that they belonged to the temple facilities (Nickel 1999, 113, 178). Characteristic are giant lamps that have survived almost exclusively in cult complexes (Witteyer 2003, 11, fig. 12; Wiblé 2004, 143; Höpken and Fiedler 2008, pl. 111.10a–b). They guaranteed a long-lasting and bright lighting in large rooms (Fig. 7).

Miniature forms: miniature vessels show a wide variety across a spectrum of types; they are not limited to certain forms. Very common are small plates, bowls and drinking vessels (Fig. 6 nos 6–22), and similar small scale versions (Mithraeum Saarbrücken: Schumacher 2006, 47, fig. 25; Vercès-Lachat: Martin-Kilcher 2013, 229, fig. 17). Small formatted money boxes are occasionally found in cultic contexts (Fig. 6 nos 1–5); the small, non-functional coin slot attests to the symbolic meaning of these vessels (Fiedler and Höpken 2007). In this regard they are related to jugs in a miniature vessel ensemble at Avenches; here, the vessels could not be used since they were closed already before firing (Castella *et al.* 2013, 287). In tombs of the second and third centuries miniatures were deposited as well, for example, wine mixing vessels (so-called Hemmorer Eimer), oinochoe and paterae, and triple-sets of jugs (Höpken and Liesen 2013 *passim*).

3.7 Completeness

Fully intact, unbroken, vessels can occur in destruction layers without any ritual background but more often are found in intentionally deposited contexts, notably of course from graves. Additionally, these are characteristic finds in sanctuaries and cult-buildings (Gose 1972, 201, 207, 231, 366, figs 380–1; Sénéchal 1972, 290; Planck 1989, 180; Witteyer 2013, 325) as well as in foundation deposits (Pfahl 2000) or in personal dedications (Höpken 2006). Complete and intact vessels can therefore almost always be seen as a sign of a ritual context. Often they are also placed in a special way, for example, on the side or upside-down. Upside-down deposited incense burners were found for example in Apulum (Fiedler 2005, 114, fig. 13.2; Fiedler 2014, 191, fig. 7) and Günzburg (Czys 1995, 290, with pl. 16), and an upside-down deposited pot in the temple of Faimingen (Eingartner *et al.* 1993, pl. 7.2). While in Apulum the vessels were found to cover offerings (eggs), for upside-down deposited lamps in Mainz or Sarmizegetusa another idea must have lain behind such action (Witteyer 2003, 10, fig. 9; Fiedler and Höpken 2007, 455, fig. 20). In any case, these offerings were directed 'downwards', and chthonic aspects must have played a distinct role.

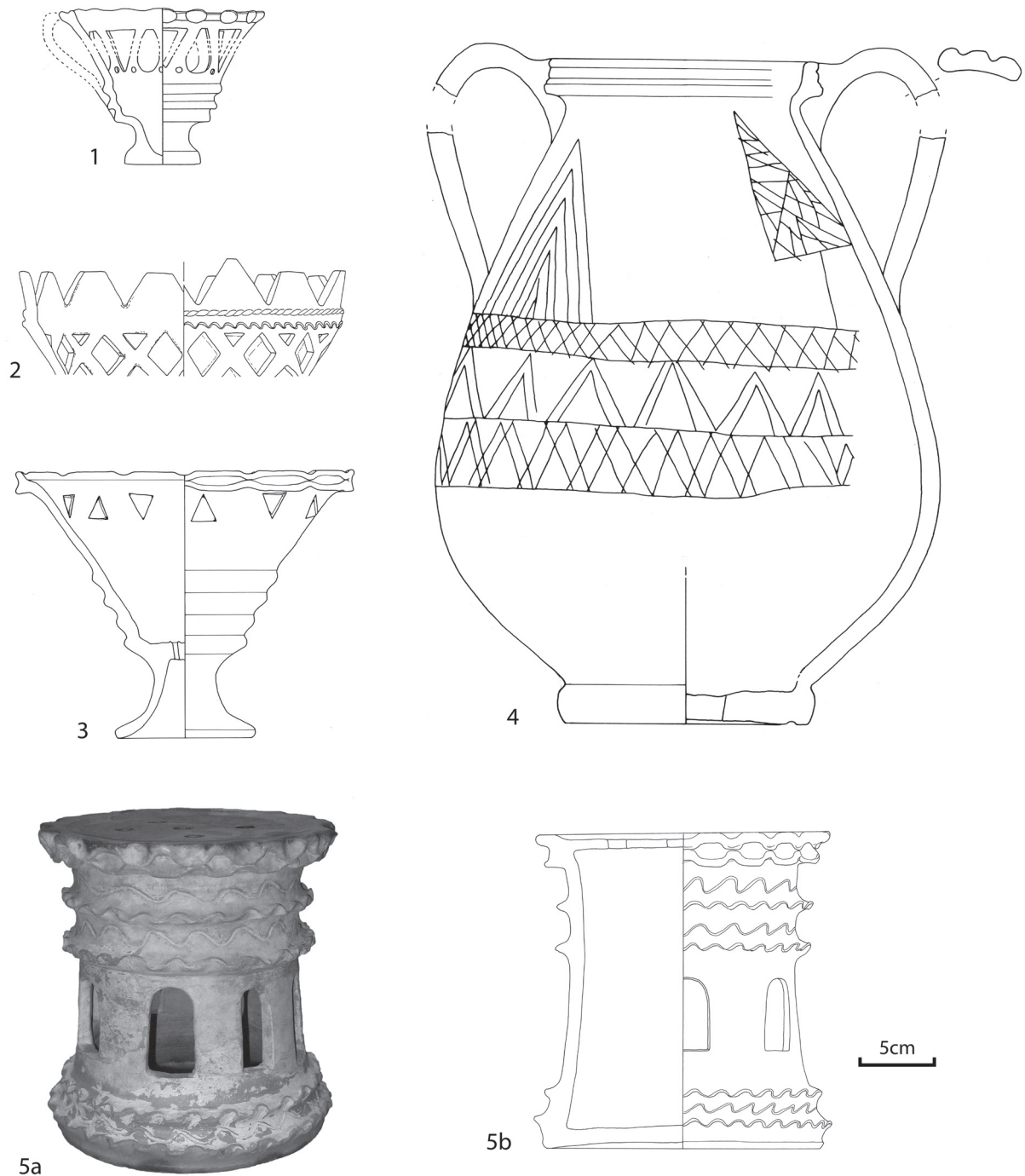


Figure 5. 1–3. Turibula and 4. crater, from the sanctuary of Liber Pater, Alba Iulia, and 5. a ceramic altar from a Sabazios complex in Straubing, Germany. All vessels are to scale.

Yet even large pieces from broken vessels, which have a high number of joins, can, beside from pottery debris or destruction situations, indicate a cultic context (Heising 2013, 305, fig. 6). This became especially clear from findings in Sarmizegetusa and Apulum where next to deliberately smashed vessels in cult pits the stones and heavy sherds with which the vessels were obviously destroyed were themselves present (Fiedler 2005, 98, fig. 2; Fiedler 2014, 190, fig. 2; Fiedler and Höpken 2013,

209, fig. 15). The dedicatory transferred thereby the votive items irretrievably from the human to the divine sphere.

3.8 Manipulated or secondary reworked vessels

Manipulated or secondary reworked vessels can occur when pottery from everyday use is, when damaged, reworked for further use. In ritual contexts, reworked or manipulated vessels can be found very often (though they are difficult to detect when in a fragmented state).

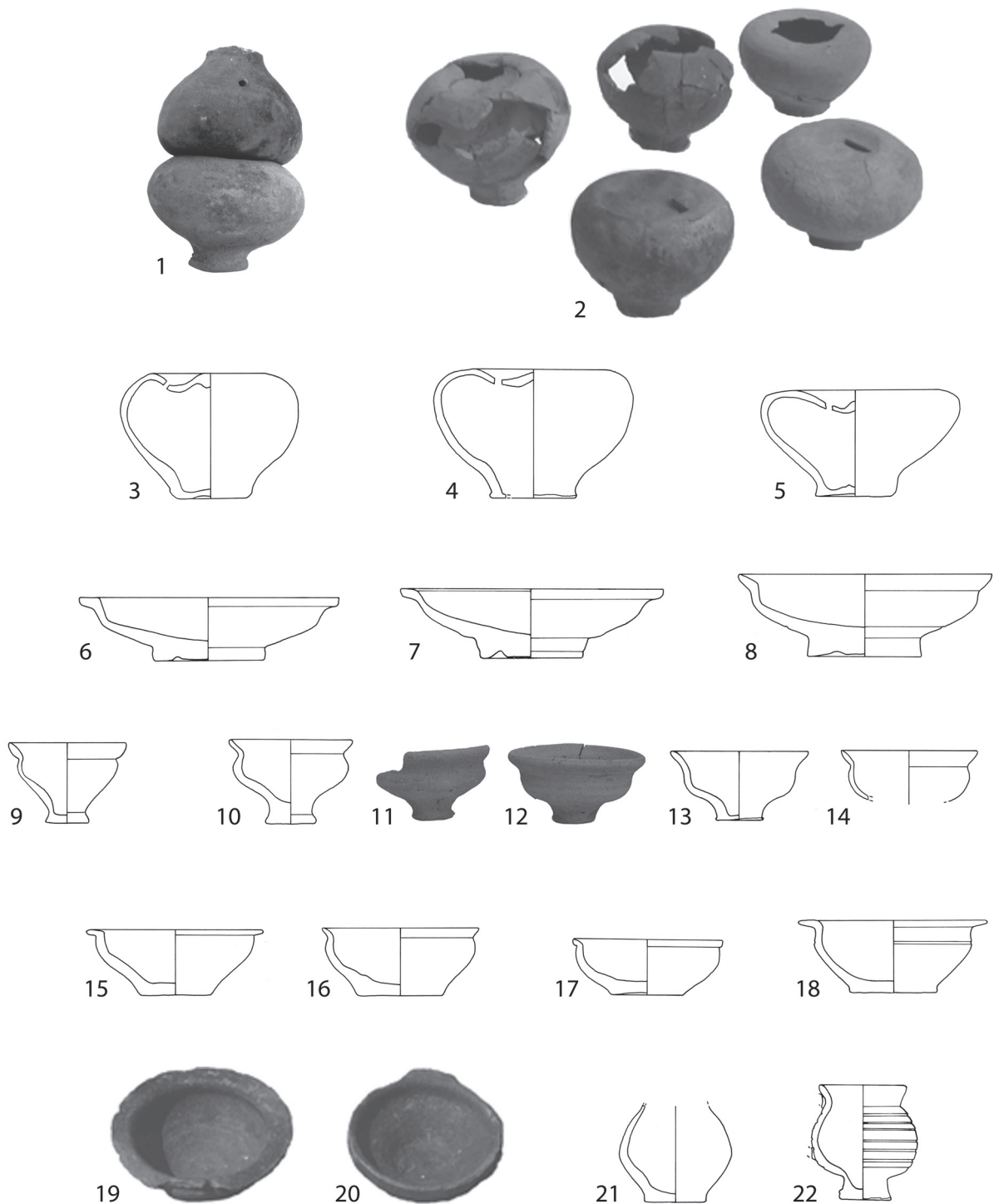


Figure 6. 1–5. Miniature money boxes, 6–8. dishes, 9–20. bowls, and 21–22. beakers (note 22 has spring points for a handle), excavated at the sanctuary of Liber Pater, Alba Iulia. Scale approximately 1:3.

Halving: Halved vessels and halved objects – not only of ceramics – have been found in several sanctuary sites. In Martigny halved lamps were excavated (Wibl  2013, 248, fig. 13), and in Kelsterbach deliberate deposition of half vessels is known (Heising 2013, 306–7). In Cologne, in a grave, half a glass bowl was found (Thomas 1992, 60, fig. 5); this had been cut intentionally in half (Price 2015).

Reworking/manipulation: Some cultic complexes have yielded plates, of which the rim was completely cut-off, which has resulted in a discus shaped vessel. Also we see pots and bowls with cut rims (H pken 2004, 251, fig. 20). Several miniature bowls in Apulum were found missing their rims, except for a portion of the original edge, so that the vessels could act as paterae (Fiedler 2005, 101,

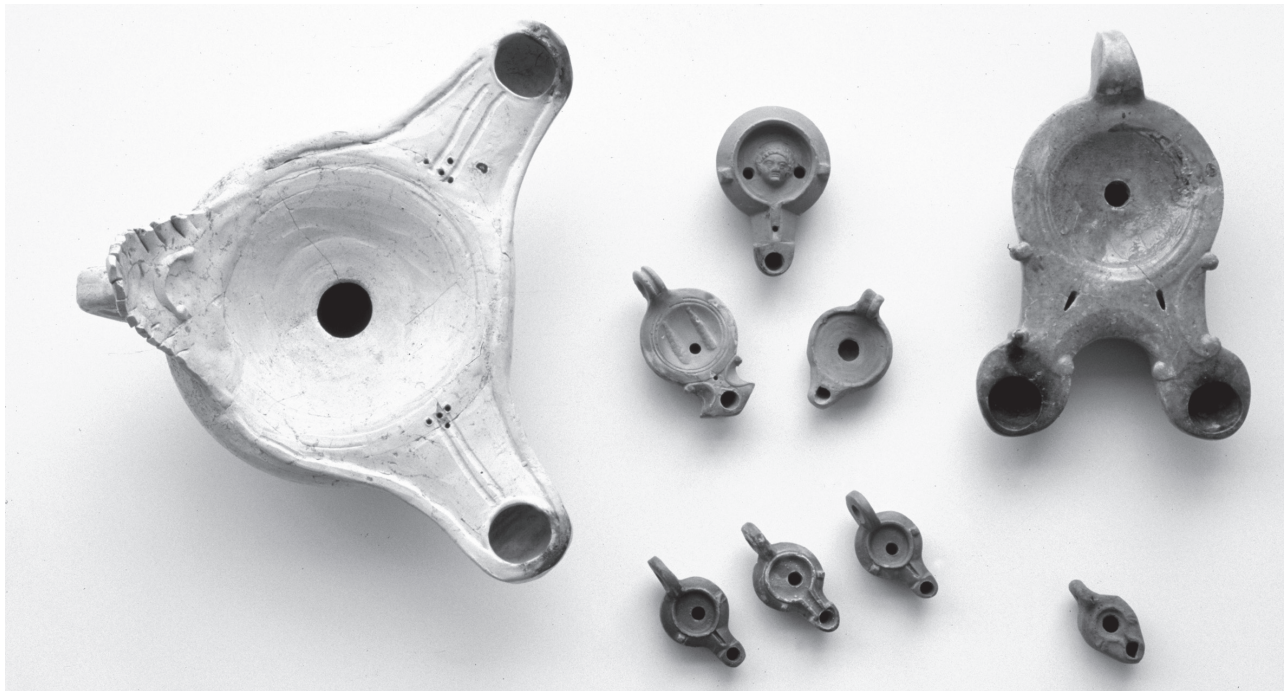


Figure 7. Different sized lamps found in the Isis and Magna Mater sanctuary in Mainz, Germany. Photograph: Archäologische Denkmalpflege Mainz, reproduced with permission.

fig. 5.2). From other vessels the foot was cut off, for example in the case of two snake vessels from the Mainz Mithraeum on Ballplatz (Huld-Zetsche 2008, 77–81) and several incense burners. In a cult pit in Apulum the already mentioned incense burner which was deposited upside-down and covering eggshells had its rim and foot cut away (Fiedler 2005, 114, fig. 13.2; Fiedler 2014, 191, fig. 7). Chipped edges are also to be noted with incense burners in Karden (Nickel 1999, 114).

3.9 Patterns of breakage

Closely related to the reworked and manipulated pottery are items which show special fracture patterns. These comprise, for example, plates with manipulated rims, in which only a snapped piece of the rim is missing. For example, in Velseke two treated terra sigillata plates lay, upside-down, at the bottom of a ritual pit (Deschietter and De Mulder 2005, 188–9). This pattern corresponds to a find in Cologne, where at the bottom of a wooden shaft lay several nearly complete vessels, including a terra sigillata plate – upside-down – with a knocked-out part of the rim. This practice has been noted with vessels included in burials in Britain (Biddulph 2002; Willis 2005, 9.6). Comparable are jugs found in graves at Cologne and elsewhere which have had their upper part completely cut off at the neck (Höpken 2016, 90, footnote 55).

In several cases, decorated parts of vessels were carefully separated and, intentionally or accidentally, buried within a cult-place. This is the case at the Mithraeae in Rome's Crypta Balbi as well as in Bonn-Sechtem or Mainz, where mostly glazed fragments with figurative

representations were found (Sagui 2004, 170, figs 7–8; Wulfmeier 2004, 91–3; Huld-Zetsche 2008, 96, 102–3).

3.10 Other aspects

Other findings that are associated with the pottery, may, of course, also give an indication of a cultic context. As already shown one category comprises lamps. Large number of lamps, many fully preserved lamps, in small or large formats, can be taken as a hint to an exceptional background for a context (Fiedler and Höpken 2013, 204–7, fig. 9–12) (see here Fig. 7). In particular ring-shaped lamps were used to illuminate ritual activities, as it is proven in the case of the sanctuaries at Crypta Balbi in Rome (Sagui 2004, 174, fig. 17), the Aesculap and Hygeia sanctuary in Sarmizegetusa (Isac and Roman 2006, 126, cat 203), with the sanctuary to Dolichenus at Doliche (Höpken and Strothenke 2012, fig. 1.4) and at a cult complex in Straubing (Prammer 1995, 95, 97, fig. 2.1).

Animal bones, too, often give clues to extraordinary deposits. Much more frequently represented in cult complexes, in comparison to habitation contexts, are poultry, especially chickens (Lentacker *et al.* 2004), as well as piglets and lambs (Höpken 2014, 208), which were particularly in demand as sacrificial animals (Deschler-Erb 2015).

4. Conclusion

To identify ritual complexes by pottery finds, caution is advised when single phenomena alone characterize finds ensembles and features. Individual appearances

or occasional vessel shapes can be related with special situations and activities in ritual but also in non-ritual circumstances. A possible cultic context must invariably be critically considered, not assumed. Nevertheless, the more of the phenomena described here (the selection of pottery types and fabrics, the preservation of ceramic vessels, certain fracture patterns and vessel manipulation) which occur in a complex of finds, the more probable that it is a context related to or arising from a ritual or religious background.

Acknowledgements

With the exception of Figure 7 all the drawings and photographs are the work of the authors. Figure 7 (the photograph of the lamps) is reproduced with kind permission of the Archäologische Denkmalpflege Mainz.

Bibliography

- Alexandrescu, C. 2007. Römische Schlangengefäße im sepulkralen Kontext, in C. Cosma (ed.) *Funerary Offerings and Votive Depositions in Europe's 1st millennium AD: Cultural artefacts and local identities*, Cluj.
- Biddulph, E. 2002. One for the road? Providing food and drink for the final journey, *Archaeologia Cantiana*, 122, 101–11.
- Biegert, S. 1999. *Römische Töpfereien in der Wetterau*, Schriften des Frankfurter Museums für Vor- und Frühgeschichte, 15, Frankfurt.
- Binsfeld, W. 1960/61. Neue Mithraskultgefäße aus Köln, *Kölner Jahrbuch für Vor- und Frühgeschichte*, 5, 1960/61, 67–72.
- Bird, J. 1996. Frogs from the Walbrook: a cult pot and its attribution, in J. Bird, M. Hassall and H. Sheldon (eds) *Interpreting Roman London. Papers in memory of Hugh Chapman*, Oxford, 119–27.
- Bird, J. 2001. Censors, incense and donors in the cult of Mithras, in N.J. Higham (ed.) *Archaeology of the Roman Empire. A tribute to the life and works of Professor Barri Jones*, BAR International Series 940, Oxford, 303–10.
- Boosen, M. 2005. Totenkult und Götterglaube, in *Tod am Limes. Die römischen Gräber von Schwäbisch Gmünd*, 36–62.
- Castella, D., Deschler-Erb, S. and Meylan-Krause, M.-F. 2013. Rituelle deponierungen in Heiligtümern von Aventicum / Avenches (CH), in A. Schäfer and M. Witteyer (eds) *Rituelle Deponierungen in Heiligtümern der Hellenistisch-Römischen Welt. Internationale Tagung Mainz 28–30 April 2008*, Mainzer Archäologische Schriften, 10, Mainz, 279–89.
- Collins Clinton, J. 1977. *A Late Antique Shrine of Liber Pater at Cosa*, Leiden.
- Czys, W. 1995. Das zivile Leben in der Provinz, in W. Czys, K. Dietz, T. Fischer and H.-J. Kellner (eds) *Die Römer in Bayern*, Stuttgart, 177–308.
- Czys, W. and Scholz, M. 2013. Ein Gastmahl mit Göttern in Notzeiten. Das Opferdepot am Rand der römischen Villa rustica bei Marktoberdorf-Kohlhunden, in A. Schäfer and M. Witteyer (eds) *Rituelle Deponierungen in Heiligtümern der Hellenistisch-Römischen Welt. Internationale Tagung Mainz, 28–30 April 2008*, Mainzer Archäologische Schriften, 10, Mainz, 353–67.
- Deschler-Erb, J. and De Mulder, G. 2005. Het archeologisch onderzoek van de vicus te Velzeke in 2003–2004. Spoeren van een baanpost in den zuidoostlijke sector. *Handelingen van het Zottegems Genootschap voor Geschiedenis en Oudheidkunde*, 12, 169–218.
- Deschler-Erb, S. 2015. *Tier und Kult. Spezielle Tierknochendeponierungen der Spätlatène- und Römerzeit aus Aventicum/Avenches (CH) im nordalpinen Vergleich*, Documents du Musée Romain d'Avenches, 27, Avenches.
- Drexel, F. 1911. *Das Kastell Faimingen*, ORL 66c, Heidelberg.
- Ebnöther, C. and Kaufmann-Heinimann, A. 1996. Ein Schrank mit Lararium des 3. Jahrhunderts, in *Beiträge zum römischen Oberwinterthur – Vitodurum 7. Ausgrabungen im unteren Bühl*, Monographien der Kantonsarchäologie Zürich 27, 229–51.
- Eingartner, J., Eschbaumer, P. and Weber, G. 1993. *Faimingen-Phoebiana I. Der römische Tempelbezirk in Faimingen-Phoebiana*, Limesforschungen, 24, Mainz.
- Eisenmenger, U. and Eleftheriadou, E. 2000. *Ein neues Schlangengefäß aus dem Legionslager Vindobona*. *Fundort Wien* 3, Wien, 34–9.
- Fiedler, M. 2005. Kultgruben eines Liber Pater-Heiligtums im römischen Apulum (Dakien). Ein Vorbericht, *Germania*, 83, 95–125.
- Fiedler, M. 2014. Bankette für Liber Pater in Apulum, in L. Ruscu (ed.) *Banquets of Gods, Banquets of Men: Conviviality in the Ancient World, 16th International Conference of the Department of Ancient History and Archaeology of the Babeş-Bolyai University Cluj-Napoca*, Nov. 23–24, 2012, *Historia*, 59/1, 189–203.
- Fiedler, M. and Höpken, C. 2004. Wein oder Weihrauch? turibula in Apulum, in L. Ruscu et al. (eds) *Orbis Antiquus. Studia in honorem Ioannis Pisonis*, Cluj-Napoca, 510–6.
- Fiedler, M. and Höpken, C. 2007. Spardosen und Miniatur-Spardosen – Neufunde aus dem römischen Apulum (Rumänien), in *Keramik auf Sonderwegen. Außergewöhnliche Formen und Funktionen*. Beiträge des 37. Internationalen Hafnereisymposiums, Herne 19.9 bis 25.9.2004, *Denkmalpflege und Forschung in Westfalen*, 44, 95–9.
- Fiedler, M. and Höpken, C. 2013. Rituelle Deponierungen im Domnus und Domna-Heiligtum von Sarmizegetusa (Dakien), in A. Schäfer and M. Witteyer (eds) *Rituelle Deponierungen in Heiligtümern der Hellenistisch-Römischen Welt. Internationale Tagung Mainz 28–30 April 2008*, Mainzer Archäologische Schriften, 10, Mainz, 199–213.
- Filtzinger, P. 1972. *Die römische Keramik aus dem Militärbereich von Novaesium (etwa 25 bis 50 n. Chr.)*, Novaesium V, Limesforschungen 11, Berlin.
- Gassner, V. 1990. Schlangengefäße aus Caruntum, in *Akten des 14. Internationalen Limeskongresses in Carnuntum 1986*, Römischer Limes in Österreich 63/2, Wien, 651–6.
- Gassner, V. 2004. Snake-decorated vessels from the canabae of Carnuntum, evidence for another mithraeum?, in M. Martens and G. de Boe (eds) *Roman Mithraism: The evidence of the small finds*, Archeologie in Vlaanderen Monografie 4, Brussels, 229–38.
- Gassner, V. 2013. Die Grube G11 im Heiligtum des Iuppiter Heliopolitanus, in den Canabae von Carnuntum- Zeugnis eines großen Festes oder, 'sacred rubbish'? in A. Schäfer and M. Witteyer (eds) *Rituelle Deponierungen in Heiligtümern der Hellenistisch-Römischen Welt. Internationale Tagung Mainz 28–30 April 2008*, Mainzer Archäologische Schriften, 10, 259–78.
- Gaubatz-Sattler, A. 1999. *Sumelocenna. Geschichte und Topographie des römischen Rottenburg am Neckar nach den*

- Befunden und Funden bis 1995*, Forschungen und Berichte zur Vor- und Frühgeschichte in Baden Württemberg, 71, Stuttgart.
- Gleirscher, P. 2011. Eine Mithrashöhle auf der Gradišče über St. Egyden, *Rudolfinum*, 15–8.
- Gose, E. 1972. *Der gallo-römische Tempelbezirk im Altbachtal zu Trier*, Trierer Grabungen u. Forsch., VII, Mainz.
- Gugl, C. and Kremer, G. 2011. Das Mithräum I, 'Am Stein' in F. Humer and G. Kremer (eds) *Götterbilder – Menschenbilder: Religion und Kulte in Carnuntum*, Wien, 164–73.
- Heising, A. 2013. Deponierung mit Hirschgeweih in einem römischen Gebäude bei Kelsterbach, Kreis Groß-Gerau – Fallbeispiel einer clausura zur Ziet des Limesfalls?, in A. Schäfer and M. Witteyer (eds) *Rituelle Deponierungen in Heiligtümern der Hellenistisch-Römischen Welt. Internationale Tagung Mainz 28–30 April 2008*, Mainzer Archäologische Schriften, 10, Mainz, 299–316.
- Heyner, R. 2013. Inventar, in *Imperium der Götter. Isis – Mithras – Christus: Kulte und Religionen im Römischen Reich*, Darmstadt, 263.
- Hilgers, W. 1969. Lateinische Gefäßnamen. Bezeichnungen, Funktion und Form römischer Gefäße nach den antiken Schriftquellen, *Beihefte Bonner Jahrbücher*, 31, Düsseldorf.
- Höpken, C. 2003. Küche und Werkstatt in Kontubernien des Flottenlagers Köln-Alteburg, *Kölner Jahrbuch*, 36, 727–35.
- Höpken, C. 2004. Die Funde aus Keramik und Glas aus einem Liber Pater-Bezirk in Apulum (Dakien). Ein erster Überblick, in M. Martens and G. de Boe (eds) *Roman Mithraism: The evidence of the small finds*, Archeologie in Vlaanderen Monografie 4, Brussels, 239–57.
- Höpken, C. 2006. Ein Lamm im Topf: Zeugnisse von Kultausübung im Flottenlager Köln-Alteburg, *Archäologisches Korrespondenzblatt*, 36, 83–90.
- Höpken, C. 2012. Römische Keramikaltäre mit eingeschnittenen Öffnungen aus Straubing und andere durchbrochen gearbeitete Gefäße und Objekte aus kultischen Kontexten, *Kölner und Bonner Archaeologica*, 2, 97–104.
- Höpken, C. 2014. Ein Bankett für Sabazios in Straubing, in L. Ruscu (ed.) *Banquets of Gods, Banquets of Men: Conviviality in the Ancient World*, 16th International Conference of the Department of Ancient History and Archaeology of the Babeş-Bolyai University Cluj-Napoca, Nov. 23–24, 2012, *Historia*, 59/1, December 2014, 204–14.
- Höpken, C. 2015. Les vases aux serpents: approche taxonomique et contextuelle, *SFÉCAG: Actes du Congrès de Nyon 14–17 Mai 2015*, 163–7.
- Höpken, C. 2016. Gefangene zwischen Diesseits und Jenseits: Außergewöhnliche Bestattungen im römischen Gräberfeld um St. Gereon in Köln, in K. Waldner, R. Gordon and W. Spickermann (eds) *Burial Rituals, Ideas of Afterlife, and the Individual in the Hellenistic World and the Roman Empire*, Stuttgart, 83–108.
- Höpken, C. and Fiedler, M. 2008. Römische Lampen aus dem Domnus und Domna-Heiligtum in Ulpia Traiana Sarmizegetusa/Dacia, in C.-A. Roman and N. Gudea (eds) *Trade and Local Production of Lamps from Prehistory until the Middle Age. Acts of the 2nd International Congress on Ancient and Middle Age Lightning Devices (Zalău-Cluj-Napoca, 13th–18th May 2006)*, *Lychnological Acts* 2, Cluj-Napoca, 145–51.
- Höpken, C. and Fiedler, M. 2011. Ein sog. Lichthäuschen aus dem Liber Pater-Heiligtum in Sarmizegetusa. Sargetia, *Acta Musei Devensis SN* 2, 143–54.
- Höpken, C. and Fiedler, M. 2014. Nimbus? Ein Kultgefäß aus Köln und weitere sogenannte Weinheber, Siebheber oder Vakuumschöpfer, in B. Liesen (ed.) *Römische Keramik in Niedergermanien*, Xantener Berichte, 27, Mainz, 366–75.
- Höpken, C. and Fiedler, M. 2015. Einfache Keramik im Kult: Form, ware und manipulation, *SFÉCAG: Actes du Congrès de Nyon 14–17 Mai 2015*, 207–11.
- Höpken, C. and Liesen, B. 2013. Römische Gräber im Kölner Süden II. von der Nekropole um St. Severin bis zum Zugweg, mit Beiträgen von Carola Berszin, Annette Paetzgen, Schieck, Ursula Tegtmeier und Frank Willer, *Kölner Jahrbuch*, 46, 369–571.
- Höpken, C. and Niemeijer, R. 2013. Lichthäuschenfragmente im Kontext: Funde aus den westlichen canabae legionis von Nijmegen (Prov. Gelderland), *Archäologisches Korrespondenzblatt*, 43, 365–75.
- Höpken, C. and Strothenke, E. 2012. Lampen vom Dülük Baba Tepesi/Dolice (TR), in L. Chrzanowski (ed.) *Le Luminaire antique. Lychnological Acts 3. Actes du 3e Congrès International d'études de l'ILA, Université d'Heidelberg, 21–26.IX.2009*, Monographies Instrumentum 44, Montagnac, 169–75.
- Horn, H.G. 1994. Das Mainzer Mithrasgefäß, *Mainzer Archäologische Zeitschrift*, 1, 21–66.
- Huld-Zetsche, I. 1986. *Mithras in Nida-Hedderheim*. Museum für Vor- und Frühgeschichte, Archäologische Reihe, 6, Frankfurt.
- Huld-Zetsche, I. 2008. *Der Mithraskult in Mainz und das Mithräum am Ballplatz*, Mainzer Archäologische Schriften, 7.
- Humer, F. and Kremer, G. (eds) 2011. *Götterbilder – Menschenbilder: Religion und Kulte in Carnuntum*, Wien.
- Imperium der Götter 2013. *Imperium der Götter. Isis – Mithras – Christus: Kulte und Religionen im Römischen Reich*, Darmstadt.
- Isac, A. and Roman, C. 2006. *Lychnus et lampas. Exhibition catalogue*, Cluj-Napoca.
- Jacobi, H. 1913. Ausgrabungen Kastell Zugmantel, *Saalburg Jahrbuch*, 5, (1924) 1–105.
- Kellner, H.-J. 1960. Die römische Ansiedlung bei Pocking (Niederbayern) und ihr Ende, *Bayerische Vorgeschichtsblätter*, 25, 132–64.
- Lentacker, A., Eryvynck, A. and van Neer W. 2004. The symbolic meaning of the cock. The animal remains from the mithraeum at Tienen (Belgium), in M. Martens and G. De Boe (eds) *Roman Mithraism: The evidence of the small finds*, Archeologie in Vlaanderen Monografie 4, Brussels, 57–80.
- Martens, M. 2004. The Mithraeum in Tienen (Belgium): Small finds and what they can tell us, in M. Martens and G. De Boe (eds) *Roman Mithraism: The evidence of the small finds*, Archeologie in Vlaanderen Monografie 4, Brussels, 25–48.
- Martin-Kilcher, S. 2013. Deponierungen in römischen Heiligtümern: Thun-Allmendingen und Loreto Aprutino, in A. Schäfer and M. Witteyer (eds) *Rituelle Deponierungen in Heiligtümern der Hellenistisch-Römischen Welt. Internationale Tagung Mainz 28–30 April 2008*, Mainzer Archäologische Schriften, 10, Mainz, 215–32.

- Matei, A. 1982. Vasul decorat cu șerpi de la Porolissum (terasa sanctuarelor), *Acta Museum Porolissensis*, 6, 17–22.
- Mihailescu-Bîrliaba, V. 1996. Turibula. Concerning the origin and utilization of a pottery category from the lower Danube, *Rei Cretariae Romanae Fautorum Acta* 33, 97–102.
- Nickel, C. 1999. *Gaben an die Götter. Der gallo-römische Tempelbezirk von Karden, Kr. Cochem-Zell, D*, Montagnac.
- Oelmann, F. 1914. *Die Keramik des Kastells Niederbieber. Materialien zur römisch-germanischen Keramik*, Frankfurt am Main.
- Pfahl, S.F. 2000. Ein römisches pars pro toto – Doppelbauopfer mit Gesichtstopf der Zeit um 200 n. Chr. aus dem Keller eines Wohnhauses der Augusta Treverorum, *Trierer Zeitschrift*, 63, 245–61.
- Pfahl, S.F. and Thiel, M. 2006/2007. Ein Kultmortarium mit Schlangendekoration des IVSTNVS aus Trier, *Trierer Zeitschrift*, 69/70, Trier, 39–49.
- Planck, D. 1989. Ein römisches Mithräum bei Mundelsheim, Kreis Ludwigsburg, *Archäologische Ausgrabungen in Baden-Württemberg 1989*, Stuttgart (1990), 177–83.
- Porzenheim, M. and Schallmayer, E. 1999. Der römische Tempelbezirk mit Kultgeschirrdepot von Dieburg, Landkreis Darmstadt-Dieburg, in F.-R. Hermann (ed.) *Festschrift für Günter Smolla*, Wiesbaden, 539–96.
- Prammer, J. 1995. Neue römische Schlangentöpfe aus dem Südvicus von Straubing, Ndb. Ausgrabungen und Funde in Altbayern 1992–1994, *Katalog des Gäubodenmuseums Straubing*, 24, 95–8.
- Price, J. 2015. Bowls in two halves, a curious feature of some late Roman glass tableware, *Journal of Glass Studies*, 57, 41–51.
- Rageth, J. 1994. Ein spätrömischer Kultplatz in einer Höhle bei Zillis, *Zeitschrift für Schweizerische Archäologie und Kunstgeschichte*, 51, 141–71.
- Ristow, G. 1974. *Mithras im Römischen Köln. Études préliminaires aux religions orientales dans l'Empire Romain*, 42, Leiden.
- Ruprechtsberger, E. 1980. Bemerkungen zur römerzeitlichen Keramik der österreichischen Limeszone: anlässlich einer Keramikpublikation aus Carnuntum, *Jahrbuch des Oberösterreichischen Musealvereins*, 125, 25–60.
- Rusu-Bolindeț, V. 1993. Considerations sur l'attribution des vases de Dacie romaine decorees de serpents appliques, *Ephemeris Napocensis*, 3, 123–41.
- Sagui, L. 2004. Il mitreo della Crypta Balbi e i suoi reperti, in M. Martens and G. de Boe (eds) *Roman Mithraism: The evidence of the small finds*, Archeologie in Vlaanderen Monografie 4, Brussels, 157–66.
- Schmid, D. 1991. *Die römischen Schlangentöpfe aus Augst und Kaiseraugst*, Forschungen in Augst 11, Augst.
- Schmotz, U. 2000. Der Mithrastempel von Künzing, LKr. Deggendorf. Ein Vorbericht. Vorträge des 18. *Niederbayerischen Archäologentag*, 2000 (2001), 111–43.
- Schumacher, F.-J. 2006. Mithraskult, in R. Melcher, *An heiliger Stätte. Römische Kulte und Heiligtümer an der Saar*, Saarbrücken, 43–8.
- Schwinden, L. 1987. Zu Mithrasdenkmälern und Mithraskultgefäßen in Trier, *Trierer Zeitschrift*, 50, 269–92.
- Scott, R.T. 1992. A new fragment of 'serpent ware' from Cosa, *Journal of Glass Studies*, 34, 158–9.
- Sénéchal, R. 1972. Découverte d'un dépôt de sacrifice gallo-romain à Alésia, *Gallia*, 30, 289–93.
- Siepen, M. and Pirling, R. 2006. Die Funde aus den römischen Gräbern von Krefeld Gellep. Germanische Denkmäler der Völkerwanderungszeit Serie B, *Die fränkischen Altertümer*, 20, Stuttgart.
- Stade, K. 1933. *Stockstadt*, ORL A6, Berlin/Leipzig.
- Stähelin, F. 1948. *Die Schweiz in römischer Zeit*, Basel.
- Thomas, M. 2004. Kultgefäße in Terra Sigillata aus Rheinzabern, in M. Martens and G. de Boe (eds) *Roman Mithraism: The evidence of the small finds*, Archeologie in Vlaanderen Monografie 4, Brussels, 201–12.
- Thomas, R. 1992. Eine römische Vorstadtvilla auf dem Barbarossaplatz, *Archäologie in Köln*, 1, 56–62.
- Tisserand, N. and Mouton-Venault, S. 2012. Un sanctuaire antique en questions: le mobilier au secours de l'interprétation du site de Crevans (Haute-Saône), *Revue Archéologique de l'Est*, 61, 159–74.
- Ulbert, T. 1963. Römische Gefäße mit Schlangen- und Eidechsenauflagen aus Bayern, *Bayerische Vorgeschichtsblätter*, 28, 57–66.
- Van Kerkhove, J. and Boreel, G.L. 2014. A characterization of the pottery production in Heerlen (Limburg, the Netherlands) in B. Liesen (ed.) *Römische Keramik in Niedergermanien*, Xantener Berichte, 27, Mainz, 241–85.
- Vermaseren, M.J. and van Essen, C.C. 1965. *The Excavations in the Mithraeum of the Church of Santa Prisca in Rome*, Leiden.
- Völkl, K. 1950. *Ein Schlangengefäß aus Veldidena*, Jahreshefte des Österreichischen Archäologischen Instituts, 8, Beiblatt, 31–6.
- Wheeler, R.E.M. and Wheeler, T.V. 1936. *Verulamium: a Belgic and two Roman cities*, Reports of the Research Committee of the Society of Antiquaries of London, 6, Oxford.
- Wiblé, F. 2004. Les petits objets du mithraeum de Martigny/Forum Claudii Vellensium, in M. Martens and G. de Boe (eds) *Roman Mithraism: The evidence of the small finds*, Archeologie in Vlaanderen Monografie 4, Brussels, 135–46.
- Wiblé, F. 2013. Offrandes rituelles et dépôts de consécration en vallis poenia, in A. Schäfer and M. Witteyer (eds) *Rituelle Deponierungen in Heiligtümern der Hellenistisch-Römischen Welt. Internationale Tagung Mainz 28–30 April 2008*, Mainzer Archäologische Schriften, 10, Mainz, 233–58.
- Willis, S.H. 2005. *An E-Monograph. Samian Pottery, a Resource for the Study of Roman Britain and Beyond: The results of the English Heritage funded Samian Project*, Internet Archaeology, 17 http://intarch.ac.uk/journal/issue17/willis_index.html.
- Witteyer, M. 2003. *Göttlicher Baugrund – Die Kultstätte für Isis und Mater Magna unter der Römerpassage in Mainz*, Mainz.
- Witteyer, M. 2013. Rituelle Niederlegungen im Heiligtum für Isis und Mater Magna in Mainz, in A. Schäfer and M. Witteyer (eds) *Rituelle Deponierungen in Heiligtümern der Hellenistisch-Römischen Welt. Internationale Tagung Mainz 28–30 April 2008*, Mainzer Archäologische Schriften, 10, Mainz, 317–52.
- Wulfmeier, J.-C. 2004. Ton, Steine, Scherben – Skulpturen und Reliefkeramiken aus dem Mithraeum von Bornheim-Sechtem, in M. Martens and G. de Boe (eds) *Roman Mithraism: The evidence of the small finds*, Archeologie in Vlaanderen Monografie 4, Brussels, 89–94.

An early Romano-British double flue pottery kiln at Church Road, Snape, Suffolk

*Antony R.R. Mustchin and Andrew Peachey
with contributions by John R. Summers*

Abstract

Between February and May 2013 Archaeological Solutions Ltd conducted an excavation on land at Church Road, Snape, Suffolk. The project revealed abundant evidence dating to the Romano-British period (mid- to late first century AD). Significant features included a double flue pottery kiln (2633) located within an area of ditched enclosures. The Roman pottery assemblage chiefly comprised a group of waster material from Kiln 2633, representing either material fractured during firing or rejected and back-filled as the kiln was abandoned.

Keywords: Snape, Suffolk; archaeology; Romano-British; pottery; kiln; rural settlement

1. Introduction

Snape, a village in the Suffolk Coastal region, is located approximately 7km from the coast on the northern bank of the River Alde, at the head of its estuary. The River Fromus, a tributary of the Alde, passes some 600m to the west. The Church Road site (NGR TM 394 584) occupies a plateau and gentle south-facing slope (c 12–16m AOD) set within the area's low-lying and gently undulating topography. The site comprises a sub-rectangular plot measuring some 6700m² (Fig. 1).

2. The Romano-British site

Early Romano-British features, dating to the mid- to late first century AD (Table 1), were recorded across the site (identified pre- and post-Roman phases are presented elsewhere (Mustchin 2014)). These included a series of ditched enclosures, continued to the west by a hitherto undated cropmark (SNP 032; Fig. 1). Most notable, however, was a double flue pottery kiln (2633; Fig. 1) located in the north-west part of the site (Enclosure 1). Although associated structural evidence was limited, a putative section of ditched trackway, running east to west across the southern half of the site, may have provided access to a local core of settlement and/or the nearby River Fromus. Overall, encountered features were in keeping with the findings of earlier investigations (Lichtenstein 2013; Sabin and Donaldson 2012).

3. Pottery Kiln 2633

A double flue pottery kiln (2633) was located in the far north-west of Enclosure 1 (Figs 1 and 2). It had an oval clay-lined central firing chamber (2634) linked to separate stoke holes by tapering, clay-lined flues, with the latter features lying opposite each other (Figs 2 and 3). The arches of both flues had collapsed in antiquity. The thickness of the clay lining (2719 = 2859) varied between 0.06m and 0.38m on the walls of the central chamber which survived to a maximum height of approximately 0.96m (Fig. 3). Organic temper, mostly comprising spelt wheat straw, was identified as impressions in the kiln's lining. Spelt wheat fine sieving waste was also identified within environmental samples from the kiln's fills and is likely to have constituted a significant part of the fuel used. The fired clay floor of the central chamber (2719 = 2859) was c 0.16m thick and rose sharply at the centre to form Pedestal 2770, grooves in the top of which may have originally supported rods or other kiln furniture (Fig. 4). The fills of the central chamber and stoke holes were representative of the kiln's last firing and post-abandonment dereliction/infilling.

The primary fill of the kiln's central chamber (2635) – presumably representative of its last firing – yielded 39 sherds (1090g) of mid- to late first century AD pottery. All of the pottery from the kiln was of a similar date (see Peachey, below). The secondary fill of the chamber (2636) comprised compacted collapse material from Clay Lining 2719 (=2859; 7497g total) and represented the

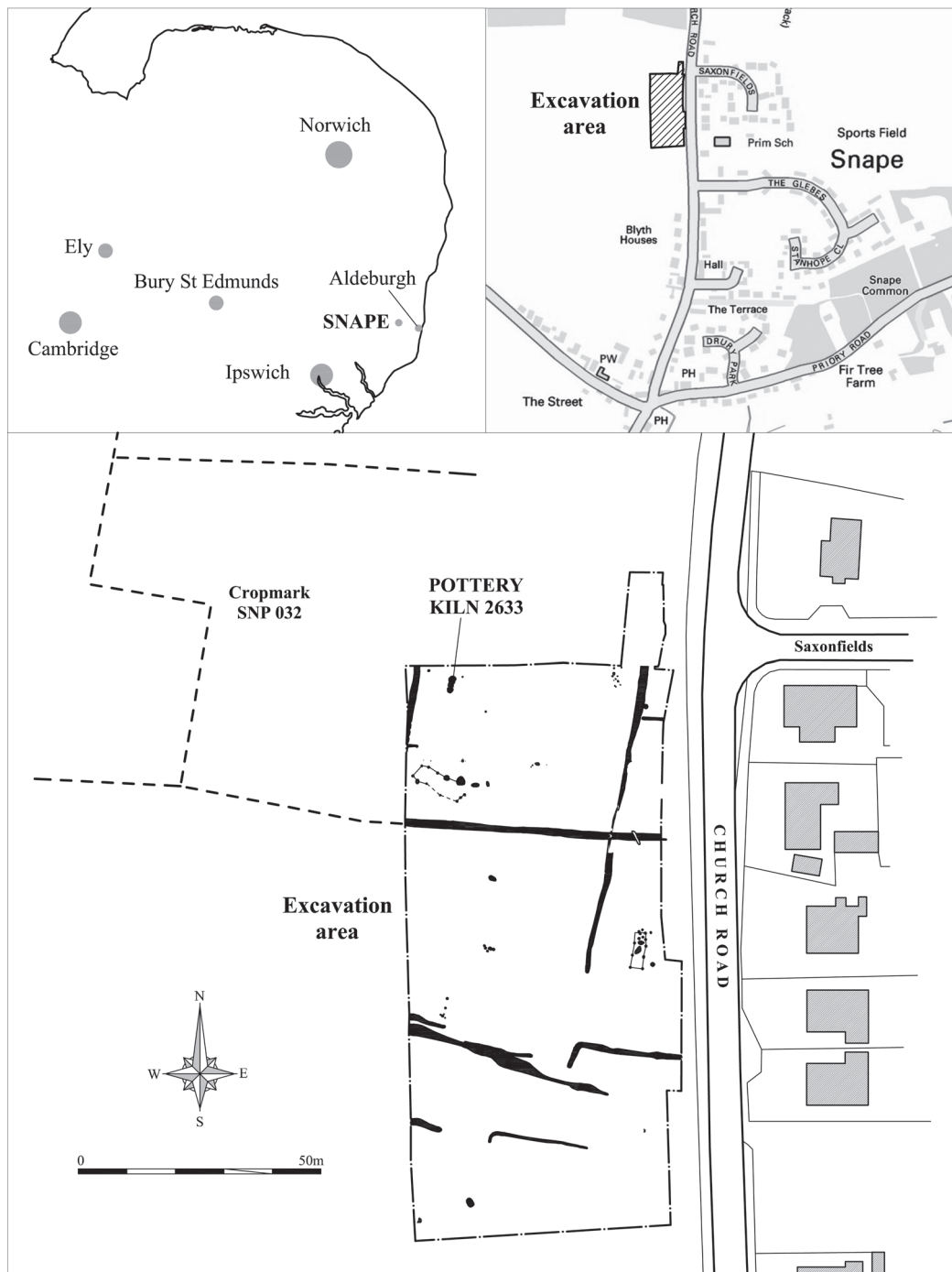


Figure 1. The Romano-British site at Church Road, Snape, Suffolk.

post-abandonment dereliction of the kiln's superstructure. This fill yielded another 39 sherds (737g) of pottery. The uppermost fills of the chamber were thought to represent a levelling event (2637) and natural infill (2638), and contained substantially less pottery.

The kiln's northern (2714) and southern (2765) stoke holes each contained four fills, closely comparable to those within Central Chamber 2634. The primary fills of both continued into the adjacent flues and, once again, were thought to be contemporary with the kiln's last firing. Pottery from these fills comprised 79 sherds

Table 1. The date of Romano-British activity at Church Road, Snape

Period	Ceramic date	(Combined) Radiocarbon date range
Romano-British	Mid to late first century AD	101 cal BC–cal AD 56 45 cal BC–cal AD 74

(1010g). In total, the primary and post-abandonment fills of the stoke holes contained 267 sherds (4411g) of pottery.

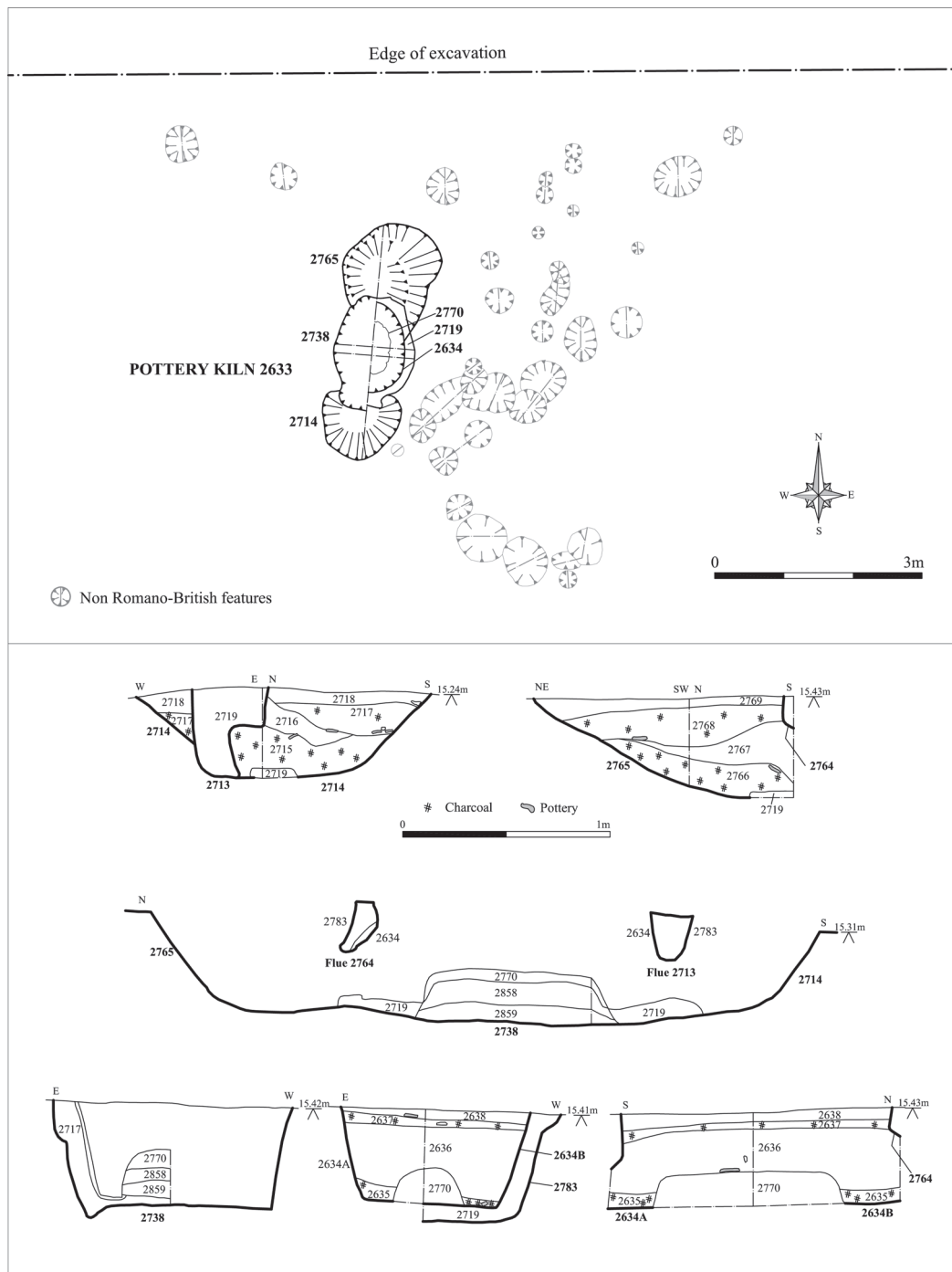


Figure 2. The double flue pottery kiln (Kiln 2633).

4. The pottery

Andrew Peachey

4.1 The nature of the assemblage

The focus of the Roman pottery assemblage was the group of waster material from Kiln 2633, representing either material fractured during firing or rejected items, back-filled as the kiln was abandoned. Further Roman pottery related to this kiln activity was contained in other features, notably the enclosure ditches, while a contrasting

component of imported Roman pottery was contained in Anglo-Saxon features, representing curated sherds and exotica. The latter are discussed separately (see Peachey in Mustchin, 2014).

4.2 Roman fabric descriptions and abbreviations

Products of Kiln 2633

RE1. Pale brown-cream to pale mid-grey surfaces fading to a slightly contrasting core (relative to surface colour). Inclusions comprise sparse-common, moderately-sorted



Figure 3. Kiln 2633 (following excavation) showing Stoke Hole 2714 and Flue 2713 (foreground), Central Chamber 2463, sections through Clay Lining 2719 and Pedestal 2770 (centre), Flue 2764 and Stoke Hole 2765 (background), looking north. Photo: Laszlo Lichtenstein, Archaeological Solutions Ltd.



Figure 4. Detail of the Central Chamber 2463 and Pedestal 2770. Photo: Laszlo Lichtenstein, Archaeological Solutions Ltd.

quartz (0.2-0.5mm), occasional rounded white chalk (0.25-1mm), fine mica, and red/black iron rich grains (<0.5mm). A hard fabric with slightly abrasive surfaces.

RE2. As RE1, but with common medium-coarse quartz (typically 0.3-0.75mm); all other inclusions being comparable.

OX1. As RE1, but oxidised orange-red, sometimes with red-brown to black surfaces.

Other early Roman fabrics

BSW1. Black-surfaced/Romanising grey ware. Black surfaces, thin red margins and a mid-grey core. Inclusions comprise common quartz (<0.25mm, occasionally polycrystalline to 1mm) and sparse dark red/black iron rich grains/grog.

SOB GT. Southern British (Belgic) grog-tempered ware (Tomber and Dore 1998, 214).

BAT AM 2. Baetican (Late) amphorae 2 fabric (Tomber and Dore 1998, 85).

Abbreviations used in the text:

Cam: the Camulodunum/Colchester type series (Hawkes and Hull 1947; Bidwell and Croom 1999); Burgh (Martin 1988); Wherstead (Symonds 2001); Sheepen (Niblett 1985); Hacheston (Plouviez 2004).

4.3 Pottery from Kiln 2633

The kiln group: 372 sherds (6470g) was contained in Firing Chamber 2634 and Stoke Holes 2713/ 2714, 2764/ 2765, with the sequence of fills appearing to represent the final firing and back-filling of the kiln. Several further form types in the kiln fabrics, both reduced and oxidised occurred in other features, indicating their contemporary chronology. Other fabric types present occurred only in limited quantities (Table 2).

The kiln group included eight vessel types in three related fabrics that all appear to have been products of the kiln (Table 3). Several sherds from within the kiln have been re-fired or exploded during firing, indicating the presence of waster material, although the intended finish, oxidised or reduced, of the fabrics, is unclear and given the lack of attention to finish may have been acceptable as either. Fabrics RE1 and OX1 appear interchangeable as variants of a single manufactured coarse ware, while fabric RE2 is certainly a relative of these more common types, probably at the coarser end of a fabric continuum, in which it was deliberately designed for larger jars and storage jars to ensure robustness during firing and use. Therefore, the distinctions between the three fabrics are partially subjective as they were clearly produced together as part of a single process, and the nature of waster material obscures the true intended finish, although vessels outside the kiln deposits suggest both reduced and oxidised vessels were utilised.

The principal product of the kiln appears to have been a type of butt beaker (Table 2), as demonstrated by rim

Table 2. Quantification of the Roman pottery fabric types by numbers of sherds (*F*, frequency), weight in grams (*W*) and rim estimated equivalent (*R.EVE*) in Roman feature groups

Group:	Pottery Kiln 2633			Enclosure Ditches			Other features		
Fabric:	<i>F</i>	<i>W</i>	<i>R.EVE</i>	<i>F</i>	<i>W</i>	<i>R.EVE</i>	<i>F</i>	<i>W</i>	<i>R.EVE</i>
RE1	172	1902	1.80	85	658	0.55	102	1000	2.15
RE2	45	1644	0.27	45	790	0.40	27	343	0.10
OX1	155	2924	1.38	93	595	1.65	15	65	0.15
BSW1	—	—	—	6	78	0.20	—	—	—
SOB GT	—	—	—	2	49	0.05	—	—	—
BAT AM2	—	—	—	1	153	0.25	—	—	—
Totals	372	6470	3.45	232	2323	3.10	144	1408	2.40

Table 3. Vessel types contained in Kiln 2633, quantified by *R.EVE* and minimum number of vessels (*MNV*)

Vessel type	Diagnostic characteristics	Fabrics	Total <i>R.EVE</i>	<i>MNV</i>
Beaker	Butt beaker with down-turned bead rim	RE1, OX1	1.08	6
Jar	Everted bead rim, ?single plain shoulder cordon	RE1	0.20	2
Jar	Everted bead rim, double plain shoulder cordon	OX1	0.23	1
Jar	Everted bead rim, short neck, plain body	OX1	0.32	2
Jar	Everted bead rim, short neck, grooved neck/shoulder	OX1	0.05	1
Jar	Narrow neck, everted bead rim, plain shoulder cordon, globular body	OX1	0.30	1
Jar	Miscellaneous, everted bead rim	RE1, OX1	1.00	6
Storage Jar	Everted bead rim, stabbed decoration on shoulder	RE2, OX1	0.27	2
Totals			3.45	21

equivalents *EVE* quantification, with this prevalence further underlined by a high number of neck and shoulder sherds from additional beakers that could not be quantified using this statistical method. The butt beaker type has a down-turned bead rim, tall neck and plain shoulder cordon, and includes examples from Stoke Hole 2714 (RE1: Figs 6.1 and 6.12; OX1: Fig. 7.18) and Central Chamber 2634 (RE1: Figs 6.2, 6.3 and 6.4), with further diagnostic sherds in all parts of the kiln. The butt beaker rim sherds consistently indicate a diameter of 14–16cm, suggesting they were drinking vessels with a relatively high capacity, possibly up to 2 pints (*c.* 1.14 litres). The form type corresponds with Cam 113 at Colchester, which is derived from North Gaulish roulette decorated beakers; however, none of the examples from Snape exhibit any form of decoration beyond burnishing. The butt beakers in this group also lack the characteristic internal ledge of the ‘classic’ form type, which is present on the otherwise comparable examples of Sheepen 33 and Burgh 229. However, the down-turned bead rim profile without an internal ledge is comparable to Wherstead 16, another kiln site in the area. Based on the close comparisons of the butt beakers from other early Roman kiln sites, notably Wherstead and Sheepen, and the lack of evidence for pre-conquest pottery production, this form type appears indicative of a date in the third quarter of the first century AD (*c.* AD 50–75), although the type was produced to the end of the century.

Pottery production in Kiln 2663 also included several types of jar, all with everted bead rims and cordoned or plain shoulders (Table 3), consistent with cooking and storage vessels in early Roman assemblages from the

region. The jars are consistently sized, with rim diameters of *c.* 16–18cm, with occasional jars to 24cm. Variants with plain shoulder cordons include examples from Central Chamber 2634 (Fig. 6.5) and Stoke Hole 2764 (Fig. 6.6), which are consistent with Cam 218B/C and common in the region (ie Burgh types 73 and 205). Several other first century AD kiln sites in the region are known to have produced comparable jars with parallels including Hacheston type 22, Wherstead 43–6 and Sheepen 100, 104 and 178. The second type of jar has a short neck and plain shoulder, including OX1 examples from Firing Chamber 2634 (Fig. 6.7) and Stoke Hole 2714 (Fig. 6.8), and is consistent with the Cam 266 cooking pot (ie Sheepen 21). A further small jar, seemingly related to both types has three grooves at the base of the neck, such as the OX1 example from Stoke Hole 2765 (Fig. 6.9), and is comparable to jars produced at Hacheston (type 25: ie Plouviez 2004, 174, fig. 114.59). All of the above types are also paralleled in the pottery groups from other features; however, a single narrow-necked jar is an isolated occurrence in the assemblage. This OX1 narrow-necked jar, in Stoke Hole 2765 (Fig. 6.10) has a plain shoulder cordon and globular body comparable to the mid- to late first century jars of Hacheston type 23B and Sheepen 186, supporting the chronology indicated by the butt beakers.

The final type of vessel recorded in Kiln 2633 is a storage jar with a (rolled) everted bead rim and stabbed decoration on the shoulder, including an RE2 example in Central Chamber 2634 (Fig. 6.11). This form type is consistent with Cam 270B, and comparable to storage jars from other first century AD kiln sites, including Sheepen 209/216 and Hacheston type 31B, and is also common in

regional assemblages such as Burgh 141/352. Although clearly derived from a 'Belgic' grog-tempered precursor, this vessel type occurs predominantly in the coarser sand-tempered fabric RE2, with occasional oxidised sherds appearing to represent mis-fired or over-fired material. Relatively few rim sherds are associated with storage jars in the kiln deposit, but shoulder sherds with either a single or double row of stabbed decoration are more common, possibly reflecting the substantially larger size of the vessels (diameter: 30–34cm), although rim sherds do appear under-represented.

4.4 Pottery from the enclosure ditches

The second significant group of Roman pottery was contained in the enclosure ditches, notably 85 sherds (461g) in Ditch 2606 (Fill 2607) c 7m to the west of Kiln 2663, and 125 sherds (1463g) in Ditch 2300, which indicate the continuity of activity and deposition at the north-east of the site. The concentration of pottery in Ditch 2606 is limited to sherds in the three kiln fabrics (RE1, RE2 and OX1) and includes an RE2 jar with a grooved neck (Fig. 6.12) comparable to a type manufactured in Kiln 2663, along with multiple miscellaneous everted bead rims. The pottery in Ditch 2300 is also predominantly in the fabrics associated with the kiln, including two cordoned jars (Figs 6.13 and 6.14); but in addition, included a BSW1 tall-necked bowl with a rounded carination and burnished line decoration (Fig. 6.15). This bowl is of type Cam 209A, closely comparable to Burgh 288, and unlikely to have been produced after the first century AD. It was recovered in association with fragments of a globular beaker, the bulk of which was deliberately deposited in Pit 2332 (see below). Other vessels in the Enclosure Ditches notable for not being in the kiln fabrics include the everted bead rim of a SOB GT jar in Gully 2848 and the rim of a Baetican (BAT AM 2) Dressel 20 amphora in Ditch 2015, which has an almond profile rim with an internal ledge (Fig. 6.16) that is comparable to examples at Colchester dated to between the mid-first and early second centuries AD (Sheepen fig. 58.99; Symonds and Wade 1999, 155, fig. 3.13.15), and also present in first century AD deposits as with Burgh 356.

4.5 Pottery from other Romano-British features

A limited pottery group was associated with Post-Built Structure 2, notably 56 sherds (308g) contained in Pit 2587. The pottery in this group was entirely comprised of the kiln fabrics, and included sherds from a single OX1 cordoned cup or small bowl (Fig. 7.17) in both Pits 2587 and 2590. This form type is comparable to Hacheston type 19 and Burgh 289–291, and although not paralleled in the kiln deposit may be a contemporary mid- to late first century AD product of Kiln 2663 or another similar facility nearby.

Several isolated features also contained pottery of intrinsic interest. Foremost is Pit 2332, which contained



Figure 5. The RE1 beaker in Pit 2332. Photo: Laszlo Lichtenstein, Archaeological Solutions Ltd.

the bulk of a large globular beaker (cross-joining fragments were also recorded in Ditch 2300, a short distance to the south) in association with a cordoned jar. The RE1 beaker, with two plain shoulder cordons (Figs 5 and 7.18) is of Cam type 108 (ie Sheepen 184), and appears to have been placed deliberately at the centre of the base of the pit. The form type of the beaker was not paralleled in Kiln 2663, in contrast to the RE1 cordoned jar (Fig. 7.19) also partially contained in the pit.

5. Pottery production at Snape

Pottery production at Kiln 2663 and its use on the site does not appear specialised, and the mix of beakers, jars, storage jars and possible cups/small bowls would cater for the diverse requirements of a settlement in the immediate vicinity, possibly even serving a single farmstead or villa. The range of vessel sizes would also allow for efficient stacking within the kiln chamber, with smaller vessels stacked within large vessels, and more robust vessels supporting layers of vessels above, thus maximising kiln capacity. The date of production and the associated surrounding activity appears closely comparable to that at Wherstead in the third quarter of the first century AD (c AD 50–75) as well as mid- to late first century activity at Burgh (Martin 1988) and Colchester, notably Sheepen (Niblett 1985, 50–1).

The close comparisons with products from the major Colchester industry raised the question at Wherstead of whether the kiln was a satellite workshop of related potters, but it was concluded that the diversity of production could function quite independently, producing popular vessel types to serve local communities (Symonds 2001, 24). The evidence of the butt beakers and utilitarian jars suggests that the Snape kiln may have functioned as a similar component in the economic landscape of Roman east Suffolk, with the pottery group in Ditch 2300 suggesting either the hub of this occupation or a second kiln close by. The stylistic influence of Colchester on pottery production



Figure 6. Roman pottery types at Church Road, Snape.

appears logical, especially as the earliest known kiln at Hacheston is dated to the late first to early second century AD (Seeley 2004, 176–7), post-dating Kiln 2663. However, the production of closely comparable mid- to late first century AD butt beakers, jars and storage jars at Thorpe St Andrew, Norfolk, (Gregory 1979) and Greenhouse Farm, Cambridge, (Gibson and Lucas 2002) supports the theory that this was part of an extensive presence of localised early Romano-British industry in rural East Anglia.

Peacock (1982, 90) highlighted the fact that isolated workshops were the simplest mode of production and were more common in the countryside, where remote from lucrative urban demand circumstances were less likely to promote kiln nucleation. This model would explain why a single (or very few kilns) would produce a limited repertoire of utilitarian forms with, as seemingly here, a possible specialisation towards butt beakers; a

mode of production that Peña (2007, 32) identifies as a not infrequent rural variant. The possible specialisation towards large butt beakers may represent an attempt to create a surplus that could be exported within the local or regional area, thus elevating an industry associated with a farmstead or estate above self-sufficiency to profit.

6. Radiocarbon dating determinations

A range of environmental samples were collected during excavations at the Church Road site from which material suitable for radiocarbon dating was identified. Two radiocarbon dating samples from Kiln 2633 were submitted to the Scottish Universities Environmental Research Centre (SUERC) University of Glasgow. The radiocarbon dating determinations are summarised in Table 4 and Fig. 8 and ^{14}C ages are displayed in conventional years BP (before present (1950)). Calibrated age ranges were

determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal4.2.3; Bronk Ramsey 2009) using the IntCal13 calibration curve (Reimer *et al.* 2013). Conventional ages and calibrated age ranges were calculated by Dr Elaine Dunbar (SUERC). A detailed account of the radiocarbon dating programme, including an overview of sample availability/selection, is presented in the Research Archive Report (Mustchin 2014, Appendix 2).

7. Discussion

The Romano-British site comprised parts of at least four rectilinear enclosures and a putative trackway, possibly providing access to further enclosures and/or the River Fromus. The river systems and their fertile valleys to the west and south would have been attractive to settlers. The navigable River Alde, less than 1km to the south of the site, would also have provided easy access to the coast.

Romano-British enclosures are ubiquitous across East Anglia with numerous published examples. At Fosters End Drove, East Winch (Lally *et al.* forthcoming) a small,

late second to early third century, enclosure was found containing structural evidence associated chiefly with pottery production. The function of Post-Built Structures 1 and 2 at the current site remain uncertain, however. The East Winch enclosure was also bounded by a ditched trackway thought to link the site with similar industrial sites in the area and the River Nar, *c.* 1.8km distant (Lally *et al.* forthcoming). Romano-British enclosures and trackways have also been noted at Brandon Road, Thetford, (Atkins and Connor 2010, 11) and Childerley Gate, Cambridgeshire, (Abrams and Ingham 2008, 52). The second to third century at Childerley Gate saw the establishment of a ladder system of small, rectilinear enclosures with a trackway running along one side (Abrams and Ingham 2008).

The existence of a substantial Romano-British structure (possibly a villa) close to the Church Road site is supported by residual CBM (see Mustchin 2014). Villas were fundamentally different to native structural traditions and are synonymous with lifestyles of the wealthy of the Roman world who chose this form of classical expression (Plouviez 1999, 42). However, the known distribution of villas in Suffolk is heavily biased towards the western

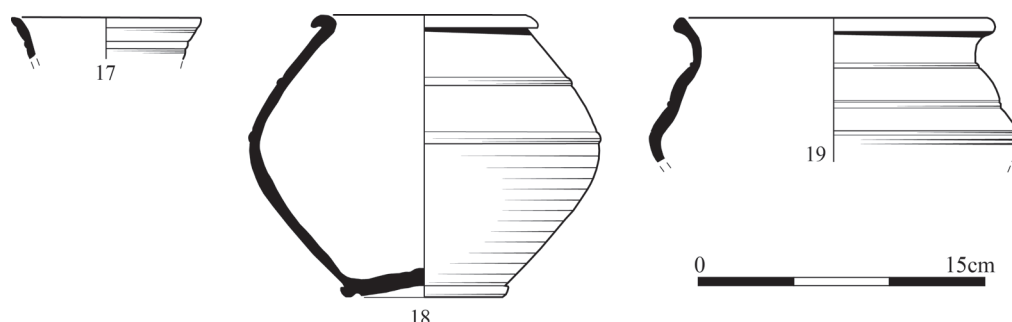


Figure 7. Roman pottery types at Church Road, Snape.

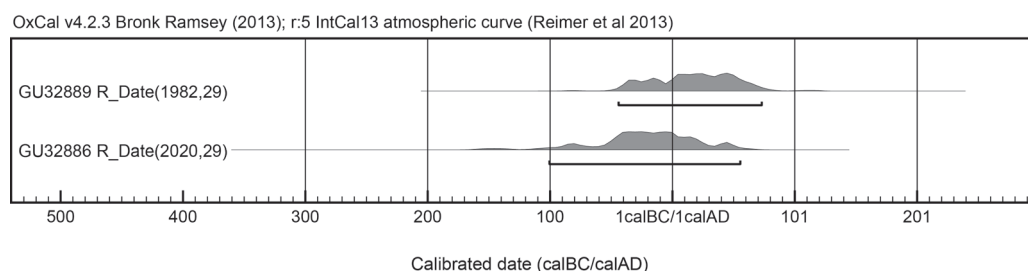


Figure 8. Radiocarbon probability distributions.

Table 4. Radiocarbon determinations (calibrated using OxCal4). Key: P = primary fill; S = secondary fill; BP = before present (AD 1950)

Feature/structure	Context code	Sample type	Genus/species	Lab. No. (SUERC-)	Date BP	Calibrated date range (95.4% confidence)
Kiln 2633 Firing Chamber 2634	L2635AP	Charred glume bases	<i>Triticum spelta</i>	50950 (GU32886)	2020 ± 29	101 cal BC–cal AD 56
Flue 2764/ Stoke Hole 2765	L2767S	Charred grain	<i>Triticum dicoccum/spelta</i>	50956 (GU32889)	1982 ± 29	45 cal BC–cal AD 74

half of the county (Plouviez 1999), adding greatly to the significance of an early villa estate, linked to the current site, should this prove to be the case.

The Romano-British site at Church Road was inherently industrial in nature with the main focus being Kiln 2633. Pottery from the kiln is datable to the third quarter of the first century AD. Material relating to the last firing and post-abandonment of the kiln produced radiocarbon dates of 101 cal BC–cal AD 56 and 45 cal BC–cal AD 74 respectively at 94.5% confidence. Although straddling the conquest era, the latter part of each range relates closely to the suggested date of pottery production at the site (c AD 50–75). The limited range of vessel forms, predominantly large butt beakers, suggests production for a specific market, probably a rural settlement or villa rustica. Apparent specialisation towards the manufacture of butt beakers at the site might also be indicative of the aim of surplus production, and the large Romano-British settlement at Hacheston (Blagg *et al.* 2004), c 9.2km to the west of Snape, may have been a viable outlet for tradable items. Coastal trade may have been conducted via the Alde estuary.

Kiln 2633 was itself similar in plan to two slightly later examples excavated at Bourne Hill, Wherstead (Gill *et al.* 2001, 6–8, fig. 7). These examples, however, were less structurally complex; the floors of both central firing chambers were unlined and both lacked integral furniture (Gill *et al.* 2001). A first century AD double flue kiln was also found at Greenhouse Farm, Cambridgeshire, and was associated with the production of fine wares (Gibson and Lucas 2002, 99–100 and 105). This site was also synonymous with the production of butt beakers – the principal product of the Snape kiln. Physiologically, the Greenhouse Farm kiln differed from the Snape example in that it contained a pair of integral pedestals running longitudinally across the floor of the firing chamber (Gibson and Lucas 2002, 100, fig. 4). The central chamber of the Greenhouse Farm kiln was slightly larger than the Snape example, however, and the splitting of the central pedestal may have been a purposeful adaptation to facilitate airflow during the firing process. Both kilns were clay-lined.

8. Conclusions

The industrial Romano-British site at Church Road, Snape, was probably associated with a villa rustica somewhere in the immediate landscape, previous evidence for which is lacking. Residual Roman CBM from Anglo-Saxon features at the site suggests the local presence of a bath house or other substantial Roman building, probably attached to a villa. The presence of an early industrial site, probably belonging to a local villa estate, adds usefully to our understanding of the timing and scale of cultural change and the up-take of new material forms in this part of Suffolk during the early Roman era.

The main focus of the Romano-British site, as revealed by these excavations, was Kiln 2633, used to produce a small range of vessel forms for localised consumption and, possibly, trade via the River Alde to the coast and/or through the settlement at Hacheston. This level of production and mode of consumption has been previously defined by Peña (2007, 32). Kiln 2633 itself adds significantly to our understanding of the technology of early Romano-British pottery production in East Anglia.

Acknowledgements

Archaeological Solutions Ltd (AS) would like to thank Hopkins Homes Ltd for funding the project and for their cooperation. The authors would like to acknowledge the input and advice of Suffolk County Council Archaeological Service Conservation Team (SCC AS-CT). Thanks also go to Dr Zoe Outram (Historic England Science Advisor for the East of England) for her guidance on radiocarbon dating. Radiocarbon dating was undertaken by the Scottish Universities Environmental Research Centre (University of Glasgow). Finds were coordinated by Adam Leigh (AS). Illustrations are by Kathren Henry (AS).

Bibliography

- Abrams, J. and Ingham, D. 2008. *Farming on the Edge: Archaeological evidence from the clay upland west of Cambridge*, East Anglian Archaeology 123, Albion Archaeology.
- Atkins, R. and Connor, A. 2010. *Farmers and Ironsmiths: Prehistoric, Roman and Anglo-Saxon settlement beside Brandon Road, Thetford, Norfolk*, East Anglian Archaeology 134, Oxford Archaeology East.
- Bidwell, P. and Croom, A. 1999. The Camulodunum/Colchester type series, in R.P. Symonds and S. Wade, *Roman Pottery from Excavations in Colchester, 1971–86*, Colchester Archaeological Report 10, Colchester, 468–87.
- Blagg, T., Plouviez, J. and Tester, A. 2004. *Excavations at a Large Romano-British Settlement at Hacheston, Suffolk, 1973–74*, East Anglian Archaeology 106, Suffolk County Council Archaeological Service.
- Bronk Ramsey, C. 2009. Bayesian analysis of radiocarbon dates, *Radiocarbon*, 51(1), 337–60.
- Gibson, D. and Lucas, G. 2002. Pre-Flavian kilns at Greenhouse Farm and the social context of early Roman pottery production in Cambridgeshire, *Britannia*, 33, 95–128.
- Gill, D., Plouviez, J., Symonds, R.P. and Tester, C. 2001. *Roman Pottery Manufacture at Bourne Hill, Wherstead*, East Anglian Archaeology Occ. Paper 9.
- Gregory, T. 1979. Early Romano-British pottery production at Thorpe St Andrew, Norwich, *Norfolk Archaeology*, 37(II), 202–7.
- Hawkes, C.F.C. and Hull, M.R. 1947. *Camulodunum: First Report on the Excavations at Colchester 1930–1939*, Reports of the Research Committee of the Society of Antiquaries of London, 14, Oxford.
- Lally, M., Nicholson, K., Peachey, A., O'Brien, L., Newton, A.A.S. and Mustchin, A.R.R. forthcoming. *A Romano-British*

- Industrial Site at East Winch, Norfolk*, East Anglian Archaeology.
- Lichtenstein, L. 2013. *Land North of Blyth Houses, Church Road, Snape, Suffolk. An Archaeological Evaluation*, Archaeological Solutions Ltd unpublished Report no. 4234.
- Martin, E. 1988. *Burgh: The Iron Age and Roman Enclosure*, East Anglian Archaeology 40.
- Mustchin, A.R.R. 2014. *An Archaeological Excavation on Land North of Blyth Houses, Church Road, Snape, Suffolk*, Archive Report, Archaeological Solutions Ltd Report no. 4471.
- Niblett, R. 1985. The coarse pottery, in R. Niblett, *Sheepen: An early Roman industrial site at Camulodunum*, CBA Research Report 57, 78–83.
- Peacock, D. 1982. *Pottery in the Roman World: An ethnoarchaeological approach*, London.
- Peña, T.J. 2007. *Roman Pottery in the Archaeological Record*, Cambridge.
- Plouviez, J. 1999. The Roman period, in D. Dymond and E. Martin (eds) *An Historical Atlas of Suffolk* (revised and enlarged edition), Ipswich, 42–3.
- Plouviez, J. 2004. The pottery from the 1974 excavation, in T. Blagg, J. Plouviez and A. Tester, *Excavations at a Large Romano-British Settlement at Hacheston 1973–1974*, East Anglian Archaeology 106, 171–6.
- Reimer, P.J., Bard, E., Bayliss, A., Beck, J.W., Blackwell, P.G., Bronk Ramsey, C., Grootes, P.M., Guilderson, T.P., Haffidason, H., Hajdas, I., Hatt, C., Heaton, T.J., Hoffmann, D.L., Hogg, A.G., Hughen, K.A., Kaser, K.F., Kromer, B., Manning, S.W., Niu, M., Reimer, R.W., Richards, D.A., Scott, E.M., Southon, J.R., Staff, R.A., Turney, C.S.M. and van der Plicht, J. 2013. IntCal13 and Marine13 radiocarbon age calibration curves 0–50,000 years cal BP, *Radiocarbon*, 55(4), 1867–87.
- Sabin, D. and Donaldson, K. 2012. *Land North of Church House, Blyth Road, Snape, Suffolk. Magnetometer Survey Report*, Archaeological Surveys Ltd, Ref No. 447.
- Seeley, F. 2004. The Hacheston kiln products, in T. Blagg, J. Plouviez and A. Tester, *Excavations at a Large Romano-British Settlement at Hacheston 1973–1974*, East Anglian Archaeology 106, 176–86.
- Symonds, R.P. 2001. The Roman pottery, in D. Gill, J. Plouviez, R.P. Symonds and C. Tester, *Roman Pottery Manufacture at Bourne Hill, Wherstead*, East Anglian Archaeology Occasional Paper 9, 13–24.
- Symonds, R.P. and Wade, S. 1999. *Roman Pottery from Excavations in Colchester, 1971–86*, Colchester Archaeological Report 10, Colchester.
- Tomber, R. and Dore, J. 1998. *The National Roman Fabric Reference Collection: A handbook*, London.

Roman pottery groups from the excavation of pits, a cremation and other features at Sholden, Kent

Rob Perrin
with a contribution by J. M. Mills

Abstract

Excavations conducted by Headland Archaeology (UK) Ltd in 2013 on land just to the north-west of Sholden, Kent (Jeffery 2015), uncovered a series of Roman remains believed to be associated with the villa at Hull Place (Parfitt 2009a; 2009b). A substantial amount of Roman pottery was recovered, mainly from pits, and a full report prepared, but constraints meant that only a summary was published with the site report (Perrin 2015). The assemblages from three of the pits and a cremation are considered important enough to warrant fuller publication.

Keywords: Sholden, Kent; settlement archaeology; Roman period; pottery; samian ware; cremation

1. Introduction

Archaeological excavations in January 2013 to the north-west of Sholden, west of Deal, in east Kent, by Headland Archaeology (UK) Ltd occurred in an area previously known to have Roman period occupation (Jeffery 2015). The site lies on the gentle slope of the Sholden Downs, with a north-easterly aspect, the immediate sub-soil comprising clay, silt, sand and gravel (Fig. 1). The excavation work was conducted in advance of residential development, with area stripping revealing three ditches, six pits, a spread and a cremation burial. These features proved to be of Roman date, evidently associated with the Roman villa at Hull Place, investigated by the Dover Archaeological Group in recent years (Parfitt 2009a; 2009b), which lies 300m to the north of the site. A substantial amount of Roman pottery was forthcoming, principally from the pits, with a summary by the present author included in the overall site report (Jeffery 2015; Perrin 2015).

The features investigated containing pottery comprised three ditches, six pits, a cremation and a spread (Fig. 2). An assemblage of nearly 1200 sherds weighing over 25kg and with a rim EVE of nearly 24 was recovered. Although the main features encountered were the ditches, particularly two parallel ditches traced for c 33m, which may have flanked a trackway or represent a double enclosure, these produced few finds and over two-thirds of the pottery came from one of the pits (Tables 1 and 3).

2. Fabrics

There was no opportunity to physically compare the pottery fabrics with the Canterbury Archaeological Trust's (CAT) fabric series, but an attempt has been made to relate the fabrics to that series based on published reports which list the main fabrics (eg in Lyne 2008); the probable CAT fabric codes are shown in *italics*. Pottery from known regional and continental sources is classified according to the National Roman Fabric Reference Collection (Tomber and Dore 1998). The colours given in the pottery catalogue are based on the Munsell Soil Color Charts (1971 edition).

A limited range of fabrics occur, mainly comprising grog-tempered wares (*B2, R1*), various reduced (*R5, R16*) and oxidised (*R6.1, R6.3, R8, R17*) sand-tempered wares and Central Gaulish samian ware (*LEZ SA 2, R43*), together with some sherds from South Spanish amphorae (*BAT AM 1, R50*), a Lower Rhineland, probably Cologne ware (*KOL CC, R25*), beaker, possible Colchester or Kent mortaria (*R63*) and probable Kent BB2 (*R14*); there are also a few sherds in a flint-gritted ware (*IA4*) and a number of sherds are in a grey fabric with ?grog inclusions which are clearly visible on the surface (*R16?*, *BER16?*). Pottery in grog-tempered ware is the most numerous (Table 2).

There is considerable variation in the colour of the grog-tempered ware, with different colours sometimes occurring on the same vessel. The inclusions in most of the vessels, where visible, are mainly black in colour, so it is likely that the grog-tempered pottery is from the same

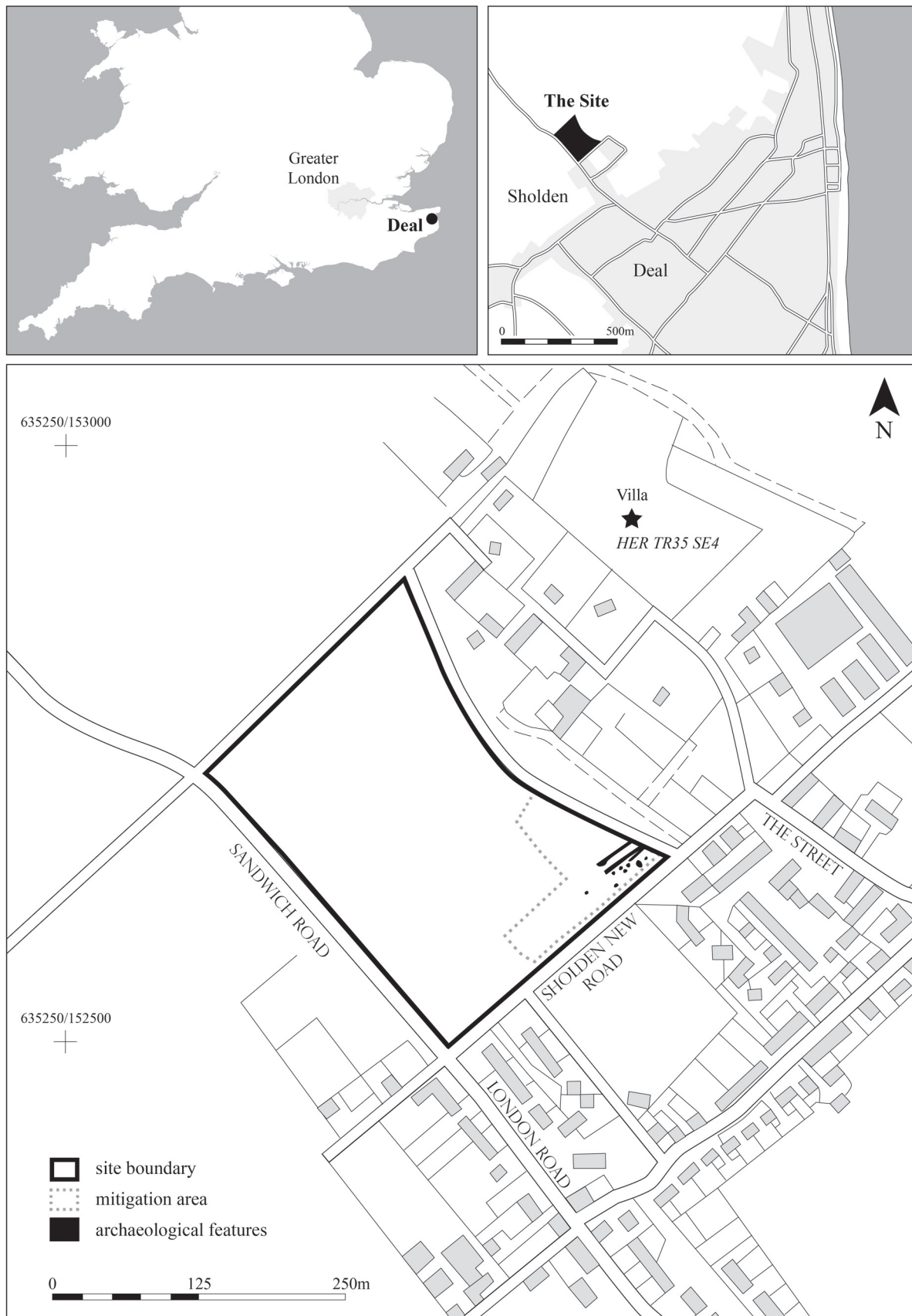


Figure 1. The location of the 2013 excavations at Sholden near Deal, Kent, by Headland Archaeology (after Jeffrey 2015). The Roman villa at Hull Place is shown.

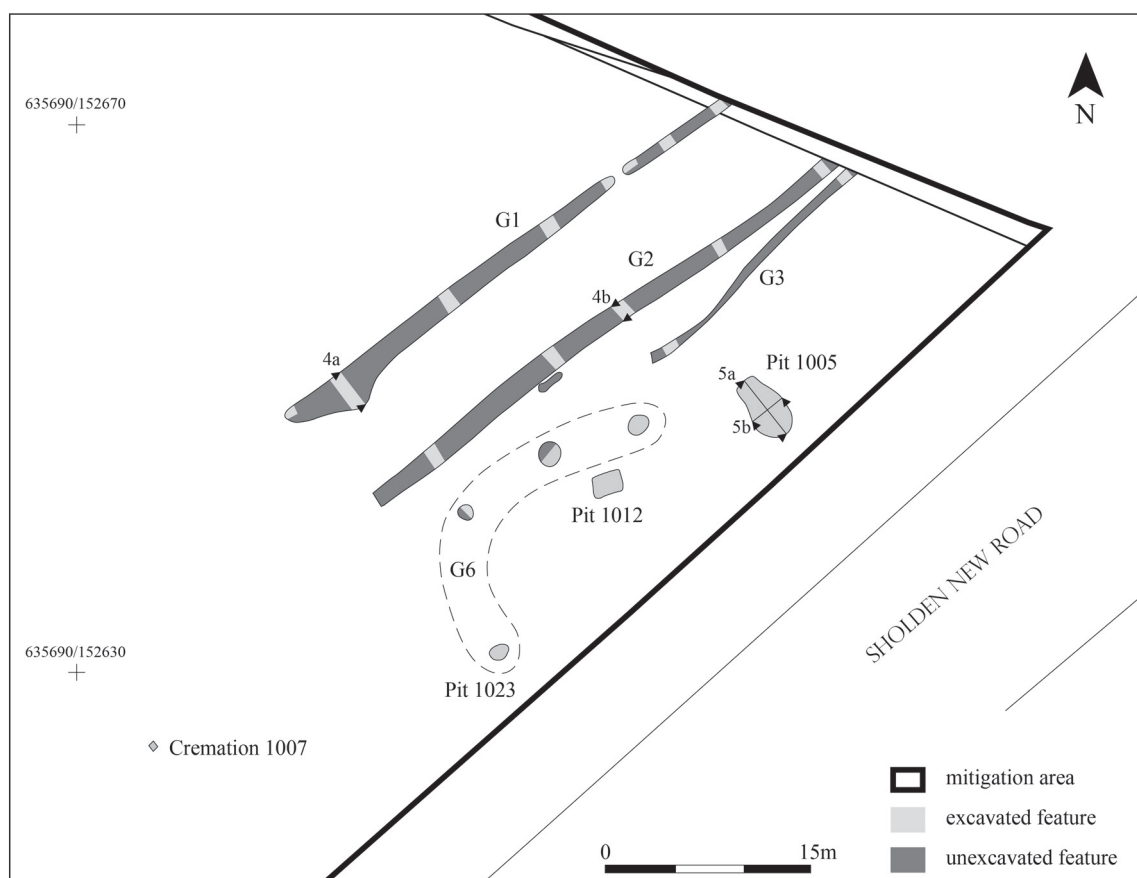


Figure 2. The 2013 excavation area at Sholden showing the archaeological features encountered (after Jeffery 2015).

Table 1. Quantification of the Roman pottery from the main features at Sholden (percentage totals relate to the whole assemblage)

Feature no.	Feature description	No. of sherds	% total	Weight (grams)	% total	Rim EVE	% total
1005	Large pit	822	69.0	19524	77.0	16.82	70.6
1012	Pit with slab	64	5.4	906	3.6	0.26	1.0
1023	Pit	131	11.0	2686	10.6	4.08	17.1
1007	Cremation	93	8.0	1282	5.0	2.20	9.2
Site totals		1192		25373		23.81	

Table 2. Quantification of the Sholden pottery assemblage by fabric

Fabric	No. of sherds	% total	Weight (grams)	% total	Rim EVE	% total
Flint	18	1.5	60	0.2		
Grog	499	41.8	14521	57.0	9.06	38.0
Grog/grey?	4	0.3	44	0.2	0.23	1.0
Reduced	336	28.3	3052	12.1	4.28	18.0
Oxidised	245	20.5	3870	15.1	3.89	16.3
BB2?	11	0.9	566	2.2	0.89	3.7
LEZ SA 2	64	5.4	2440	9.6	5.39	22.6
KOL CC	8	0.7	32	0.1	0.07	0.3
Amphora (BAT AM 1)	7	0.6	788	3.1		
Totals	1192		25373		23.81	

source, with the different colours reflecting variations in the firing. Some of the vessels appear to have been coated in a black slip.

The colours of the reduced and oxidised wares also vary. The reduced ware colours are light grey, grey, dark grey and black and the colour of the core or core edges

can be different to that of the surfaces with some sherds having a 'sandwich' core. The oxidised ware colours are buff, reddish-yellow, reddish-brown and brown. Within both the reduced and oxidised wares there is a coarse sandy fabric and one of the reduced wares has a finer fabric.

Table 3. Fabric/form and feature/form quantification of the pottery assemblage from Sholden

<i>Fabric</i>	<i>Form</i>	<i>J</i>	<i>J/B</i>	<i>B</i>	<i>D</i>	<i>B/D</i>	<i>BKR</i>	<i>J/BKR</i>	<i>F</i>	<i>M</i>	<i>C</i>	<i>L</i>	<i>Total</i>
Grog		18	4	4								2	28
Grog/grey?								1					1
Reduced		9	1	3	1	1		4					19
Oxidised		4				1	1		11	2			19
LEZ SA 2				4	7						7		18
KOL CC							1						1
Totals		31	5	11	8	2	2	5	11	2	7	2	86
<i>Feature</i>	<i>Form</i>	<i>J</i>	<i>J/B</i>	<i>B</i>	<i>D</i>	<i>B/D</i>	<i>BKR</i>	<i>J/BKR</i>	<i>F</i>	<i>M</i>	<i>C</i>	<i>L</i>	<i>Total</i>
Pit 1005		18	5	8	5	2	2	1	6	1	7		55
Pit 1008		1											1
Pit 1012		3											3
Pit 1023		7		2	1			4	3			2	19
Cremation 1007		1			1				1				3
Ditch 1026		1											1
Ditch 1030										1			1
Ditch 1032					1								1
Spread		1							1				2
Totals		32	5	10	8	2	2	5	11	2	7	2	86

(Key: J = Jar; B = Bowl; D = Dish; BKR = Beaker; F = Flagon; M = Mortarium; C = Cup; L = Lid).

3. Forms

The closed nature of the principal features allows a reasonably accurate estimation to be made of the numbers of vessels present (Table 3). There are also fragments from two or three amphorae.

The jars in grog-tempered ware include a number of large storage-type jars, one of which has curvilinear or vertical combing and two others have a horizontal 'open' lozenge decoration on the shoulder where the edges of the lozenges are comb-impressed (Fig. 4 nos 1–2). Other grog-tempered jars (some are globular and more bowl-like in shape) have curved or everted rims and short or long necks (Fig. 4 nos 3–5, 7, 9–10; Fig. 5 nos 26–7). Some have burnished decoration comprising a narrow band of lattice decoration on the shoulder and open lattice below a girth groove (Fig. 4 no. 7; Fig. 5 no. 26) and others have what appear to be wipe-marks on the lower body and bases (Fig. 4 nos 9–10). One bowl is complete bar the absence of a piece of rim (Fig. 4 no. 6).

The jars with extant rims in the finer grey ware, of varying colours, have curved or everted rims. Two of the vessels which are either jars or beakers are carinated (Fig. 4 no. 15), another has rouletted decoration (Fig. 4 no. 13), while the remaining two are of 'poppy-head' type with barbotine dot decoration (Fig. 4 no. 14). A jar with an everted rim and a probable bowl occur in a coarser grey ware while two vessels, a probable jar and a dish or a bowl with a bead rim (Fig. 5 no. 18), are in a dark grey coarse sandy ware. The jar has a narrow band of lattice decoration on the shoulder. Three other jars occur in a finer greyish brown ware: two, missing their rims, are tall vessels with neck cordons (Fig. 4 no. 11) and the other two are from carinated vessels; one has a bead rim. The vessel in the grey fabric with visible ?grog inclusions on the surface is a small jar or beaker with an everted rim

and a burnished wavy line decoration. A shallow plain-rimmed dish with a slight chamfer occurs in a black coarse sandy ware and there is also a bowl with a bead rim and an external burnished wavy line decoration in a finer dark grey ware. Its form and decoration place it in the category known as BB2 (Fig. 5 no. 17).

The oxidised wares mainly occur as buff or reddish-yellow flagons, only four of which have rim sherds. Three are of a disc-rim type with external rim grooving (Fig. 5 no. 20), two of which are small and may be from the same vessel; the other has a grooved rim (Fig. 5 no. 21). Sherds from two mortaria in a buff-coloured ware occur (Fig. 5 no. 23). Both are flanged with a small bead and have white and grey flint trituration grits and one has traces of a herringbone stamp; they may be from the same vessel. A large narrow-mouthed jar in a reddish-yellow ware also occurs (Fig. 5 no. 19).

The LEZ SA 2 vessels comprise forms 18 or 18/31, 18/31, 18/31-31, 27, 31, 33, 35 or 36 and 37. The amphora sherds comprise two Dressel 20 handles, possibly from the same vessel and a bodysherd from a Pélisset 47. The small KOL CC beaker has a simple curved rim (Fig. 5 no. 24).

4. Sources

A comprehensive study of the Roman pottery of Kent was published 30 years ago (Pollard 1988) and various aspects of Kent Roman pottery have been discussed more recently (Booth 2008; 2009; Lyne 2008; 2011). Pollard's study discusses the pottery by period in terms of fine and coarse wares in west and east Kent, while Booth's comments are in the context of the pottery recovered from excavations undertaken along the route of the Channel Tunnel Rail Link (CTRL). Lyne's comments are in relation to the pottery from the roadside settlement site at Westhawk

Farm, near Ashford, and the villa at Minster, on the Isle of Thanet.

Pollard notes that there was a long tradition of potting with flint grit in east Kent (Pollard 1988, 31) and grog-tempered wares are ubiquitous in south-east England, including most of Kent. Most of the flint- and grog-tempered pottery will have been produced locally but the pottery is likely to have been fired in clamps or bonfires, leaving little archaeological trace, and their sources therefore remain elusive (Pollard 1988, 183).

Much of the oxidised ware and some of the grey wares, particularly the coarser fabrics, are likely to have been produced in kilns which comprise the Canterbury industry (Pollard 1988, 177–9). The grey, reddish brown and brown coloured wares in finer fabrics are the products of the Upchurch and Thameside potteries (Monaghan 1987; Pollard 1988, 173–7), including those in the fabric known as BB2. Vessels in a grey fabric, similar to that with ?grog inclusions which are clearly visible on the surface, may have had a source somewhere on the Isle of Thanet (Rachael Seager Smith, pers. comm.). The mortaria may be Colchester products: certainly the herringbone stamp on one of the vessels was used by Colchester potters (Hull 1963, fig. 60, 27–42; fig. 61, 43–51; Symonds and Wade 1999, 158, fig. 4.10), but may also have been produced in Kent, perhaps at Rochester (Pollard 1988, fig. 40, 116–8).

5. Specific features: Pit 1005, layer contexts 1003 and 1004

5.1 The pottery from pit 1005 (Figs 3 and 4)

The pottery in the two fills of pit 1005 (contexts 1003 and 1004) accounts for two-thirds or more of the total assemblage (Tables 1 and 3). There are numerous joins between sherds in these fills, so they are considered as one deposit. Tables 4 and 5 show the range of forms and fabrics from the pit. The pottery also includes two amphora fragments, one a handle, probably from a Dressel 20, and a bodysherd from a Pélisset 47.

5.2 Central Gaulish samian ware (LEZ SA 2, R43; Fig. 3)

J.M. Mills

The LEZ SA 2 vessels from the pit comprise samian forms 18/31 or 31, 18/31–31, 27, 31, 33, 36 and 37. Selected items are catalogued in detail below; items S1 and S8 are illustrated in Fig. 3. (Abbreviations: O. refers to figure types in Oswald 1936–7; Rogers refers to motifs in Rogers 1974; the stamp references are to the *Names on Terra Sigillata* corpus (Hartley and Dickinson 2008–12)).

S1. 1004. LEZ SA 2 (R43) Drag. 37 (Fig. 3 no. 1; Jeffery 2015, fig. 7g (For a rubbing of the sherd online see <http://www.rgzm.de/samian/home/frames.htm> serial no. 0007498)). More than half of this bowl survives in

11 sherds, all with rather rubbed/worn edges (797g; rim diameter: 244mm; 0.75 rim EVEs; 0.39 base EVEs). Decorated with a freestyle frieze of large and small animals running right to left with partially impressed leaves in the ground below ovolo Rogers B144 and a row of beads; a simple plain ridge delineates the base of the moulded decoration. The moulding is unclear and lacks definition in places; the start/finish of the ovolo application to the mould is also evident on one of the sherds where an extra ‘tongue’ occurs and those preceding it are double struck. The footing is low and pad-like and is worn in places.

The decoration repeats the following sequence: lion eating boar (O.1491), horse running left with short tail aloft (not in Oswald) with dog (O.1980) below; large bear (Ward 2008, fig. D9 no. 1 on a Cinnamus style bowl), followed by three figures one above the other: rear-facing hind (O.1815), small bear (a small version of O.1627) and stag (?O.1720; this is the only figure which does not survive complete, and the only figure running left to right). The right side of a large leaf (possibly Rogers H13, which is recorded for Anunus II by Rogers 1999) is repeatedly impressed in the background. Similarly incomplete leaves occur with the lion and boar figure on a bowl from Les Martres-de-Veyre with a mould stamp (Terrisse 1968, fig. 27); the leaves are not shown in that illustration or by Rogers (1999, pl. 4 no. 6) but can be seen on a rubbing of the sherd available online (via <http://www.rgzm.de/samian/home/frames.htm> serial no. 0010230). The leaf edge impressions, lion and boar and large bear also occur on a bowl with a mould stamp of Paullus (Stanfield and Simpson 1990, pl. 165 no. 3).

The ovolo B144 was used by several potters, notably by Cerialis ii-Cinnamus ii and associates including Anunus ii, Paullus iv (Rogers 1999, styles 2 and 3) and Sacer II. Links with Cerialis ii-Cinnamus ii (Rogers 1999, Cinnamus style *précoce*) are evident in the use of the ovolo, lion and boar, small and large bears; the bears occurring together on a bowl with a mould signature of Cerialis ii (Rogers 1999, pl. 29 no. 4); and the links with Paullus have been noted above. The bowl bears an intra-decorative mould stamp of Anunus ii: mould maker Anunus ii, 1d tab, source Lezoux, form Drag. 37. [AN]VNI·M. Date: AD 150–170/80.

S2. 1004. LEZ SA 2 Drag. 37. Base and wall sherd with panelled decoration; the panels divided with vertical bead rows with a large bead at the base of each row. Apparently three repeating panels: putti O.401; bull O.1886 in a double medallion; a skirted figure, possibly maenad O.368, above a leaf motif with narrow looped leaves (perhaps either Rogers G224 or G225). The feet of the putti and the edge of the medallion show in the next two panels. The bull is recorded only for Casurius, potter P-18 and Servus III. Casurius tended to use a cable-edged large medallion, but did use a smaller plain double medallion, but this is not large enough to incorporate the bull motif; his beads were also larger in general than those on this vessel. Servus III used the putti, bull and maenad

although I cannot find an example of his work with a double medallion. Potter P-18 (Rogers 1999, fig. 75 no. 4) has the bull in a large double medallion, however, P-18s work is characterized by large rosette terminals on his beaded dividers which are not present here. On balance this vessel fits best within the repertoire of Servus III who is dated *c* AD 140–160.

S3. 1004. LEZ SA 2 Drag. 37. Rim sherd in Casurius style. The ovolo, Rogers B223, was used by Cinnamus, Casurius and also by Secundus I and Pugnus; here it has the large beads associated with Casurius's style below it; the vertical dividers are also formed from large beads. The figures in the panelled design are Minerva (O.126A), Apollo (O.93) and a faun standing on a plinth carrying a basket on his head (O.599). Minerva stands within an arch formed from a cabled festoon upon beaded pillar(s). The divider between Minerva and Apollo has three astragalli across it, one each at the top, middle and base. The ovolo, Minerva and the Faun on the plinth are on a bowl attributed to Casurius from Leicester (Stanfield and Simpson 1990, pl. 137 no. 55) whilst Minerva with the astragalli and divider appear together on a bowl from Corbridge (Stanfield and Simpson 1990, pl. 135 no. 42). The Apollo is on a bowl from Lachmirowice, Poland, stamped in the mould by Casurius (Tyszler 2013, fig. 21 no. 4). A parallel for the arch has not been found. Date: *c* AD 160–190.

S4. 1003. Aeternus, 5a, Drag. 31, LEZ SA 2. Stamped AETERNI with swallow tail ends to stamp frame. This is the earlier of the two dies associated with this potter. Date: AD 155–175.

S5. 1003 and 1004. Albucius ii, 6e, Drag. 33, LEZ SA 2. Stamped ALBVCI. Sherds from two contexts of this pit make an almost complete vessel, perhaps some of the missing chips are recent, but several breaks are worn indicating that the vessel was discarded in pieces. Date: AD 145–175.

S6. 1004. Icttiamia, 1a, Drag. 33, LEZ SA 2. Stamped ICT[T]IAMA

This stamp occurs most frequently on Drag. 33 cups. Although not necessarily truly literate (Hartley and Dickinson 2009, 260) it occurs on many British sites and even when broken and poorly impressed, as here, can clearly be read as shown. Date: AD 150–195.

S7. 1003. Reburus ii, 4a, Drag. 33, LEZ SA 2. Stamped REBVRIIϷOI

The leaf does not register fully on this example, the upper part appearing as a blind Λ and linking into the O. Complete base with footring slip worn from one side only, which is also chipped. The underside is poorly finished with two pellets of clay smudged down from the inside of the footring onto the underside of the base. Date: AD 140–170.

S8. 1004. Sextus v, 5a, Drag. 18/31–31, LEZ SA 2. Stamped SEX[TI]·M

Almost complete. The vessel is transitional between Drag. 18/31 and a true Drag. 31. The base rises from

the junction with the wall, but the wall is still relatively shallow suggesting this vessel should be dated to the earlier part of this potter's range of AD 155–200, perhaps AD 155–175. The vessel has complex graffiti on the underside (Fig. 3 no. 2).

Of this graffiti Dr Roger Tomlin writes:

'Underneath, within the footring, two graffiti have been scratched after firing.

(1) In the centre, two angular strokes which could be read as C. If so, it is the initial letter of the owner's name.

(2) Scored over (1), a horizontal diameter-line cutting two pairs of lines meeting at about 90 degrees. The whole forms a simple geometrical figure, an illiterate mark of identification.

The vessel presumably changed owners. 'Stars' consisting of two or three lines intersecting are common as illiterate marks of identification; this is a slight elaboration. It may be compared with the geometrical figures incised on masonry facing stones, for example RIB III, 3371.'

5.3 Grog-tempered ware (Fig. 4)

1. B2. Light red to pale brown with a grey core in places and darker patches. From contexts 1003 and 1004. Comparanda: *cf* Booth 2009, fig. 6 no. 18: Late Iron Age to early Roman.
2. B2. Grey to light brownish grey. Context 1004. Comparanda: *cf* Booth 2009, fig. 6 no. 18: Late Iron Age to early Roman.
3. B2. Dark grey external surface and core and dark grey to dark greyish brown internally, yellowish red core edges, showing through on surface. Possible finger marks on exterior and interior of rim in one place. Context 1003. Comparanda: *cf* Lyne 2011, fig. 6 no. 55, assemblage 14: *c* AD 100–150 and fig. 10 no. 99, assemblage 20: *c* AD 150–200.
4. B2. Dark grey to very dark grey (10YR3/1) externally, dark grey internally. Contexts 1003 and 1004. Comparanda: *cf* Lyne 2011, fig. 6 no. 55, assemblage 14: *c* AD 100–150.
5. B2. Very dark grey externally, dark grey internally, light brown core. Slipped? Friable surface. Contexts 1003 and 1004.
6. B2. Light grey to dark greyish brown. Complete, bar piece of rim, and rim is chipped in places elsewhere. Base and lower body have patches of varying colours, perhaps flame or heating marks. Context 1004. Comparanda: *cf* Booth 2009, fig. 6 no. 16: Late Iron Age to early Roman; Lyne 2008, fig. 6.3 no. 55: AD 70–150.
7. B2. Dark grey (10YR4/1) to dark greyish brown, dark grey core and reddish yellow externally below girth grooves. Contexts 1003 and 1004. Comparanda: *cf* Frere 1970, fig. 9 no. 17: *c* AD 60; Lyne 2011, fig. 10 nos 101–2, assemblage 20: *c* AD 150–200; Monaghan 1987, 4A1.1, 4A1.2: AD 70/90–120;

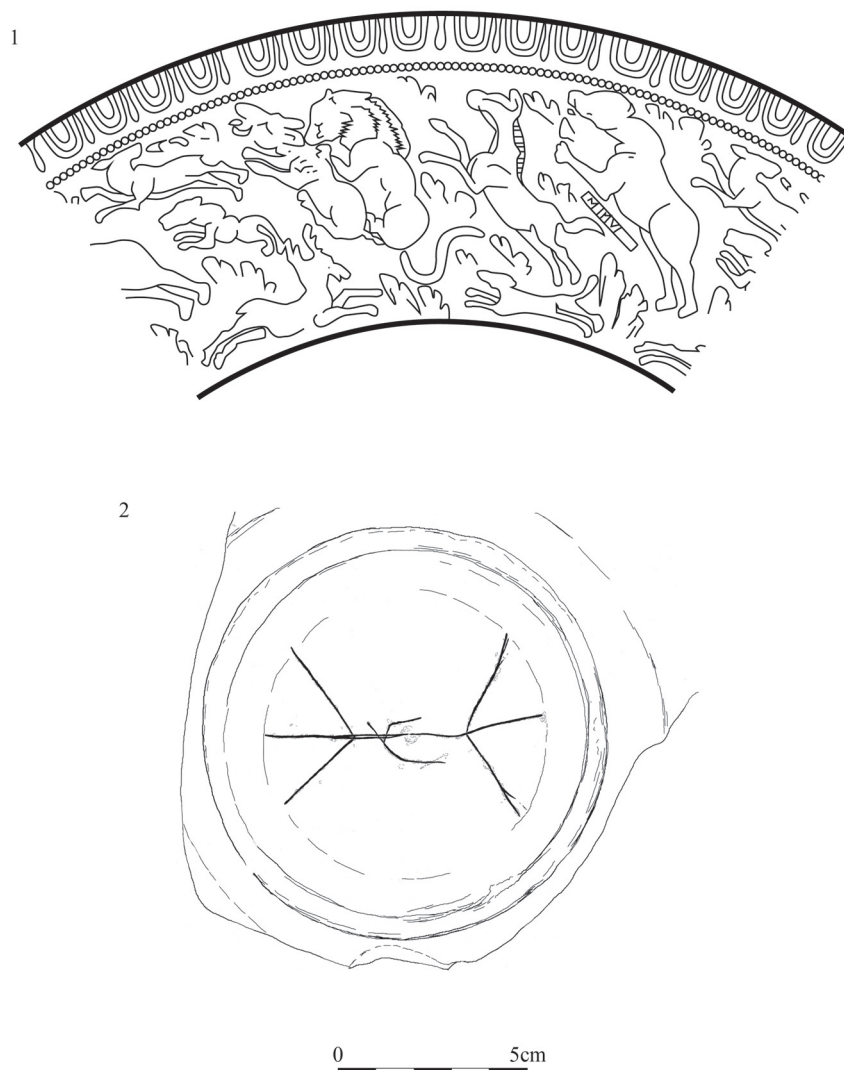


Figure 3. Samian ware items S1 (no. 1) and S8 (no. 2) from Pit 1005 at Sholden.

- Philp 1981, fig. 55 no. 408 and fig. 67 no. 738: AD 90–125 (Richborough); Savage 1998, fig. 12 no. 32: late second century burial.
8. B2. Not illustrated. Similar to 7. Dark grey to dark greyish brown, dark grey core and yellowish red core edges, showing through on surface. Contexts 1003 and 1004. Comparanda: *cf* Frere 1970, fig. 9 no. 17: *c* AD 60; Monaghan 1987, 4A1.1 and 4A1.2: AD 70/90–120; Philp 1981, fig. 55 no. 408 and fig. 67 no. 738: AD 90–125 (Richborough); Savage 1998, fig. 12 no. 32: late second century burial.
 9. R1. Very dark grey to dark brown with lighter patches, dark grey core and reddish yellow core edges. Striations or wipe marks on lower body and base. Context 1004. Comparanda: *cf* Frere 1970, fig. 10 no. 21: AD 220–50 ('late survival'); Hoskins *et al.* 2005, fig. 2 B1: *c* AD 150–225, fig. 4 F1: *c* AD 150–200, fig. 4 G1: *c* AD 100–200, and fig. 6 K1: *c* AD 150–200; Lyne 2011, fig. 7 no. 67, assemblage 15: *c* AD 150–200; Savage 1998, fig. 7 no. 4 and fig. 8 no. 10: mid- to late second century burials.
 10. R1. Dark grey to dark greyish brown, dark grey core and yellowish red core edges, showing through on surface. Striations or wipe marks on lower body. Context 1004. Comparanda: *cf* Frere 1970, fig. 10 no. 21: AD 220–50 ('late survival'); Hoskins *et al.* 2005, fig. 2 B1: *c* AD 150–225, fig. 4 F1: *c* AD 150–200, fig. 4 G1: *c* AD 100–200 and fig. 6 K1: *c* AD 150–200; Lyne 2011, fig. 7 no. 67, assemblage 15: *c* AD 150–200; Savage 1998, fig. 7 no. 4 and fig. 8 no. 10: mid- to late second century burials.

5.4 Reduced wares (Fig. 4 nos 11–15, Fig. 5 nos 17–18)

11. R16. Pinkish brown (7.5YR6/2) to brown (7.5YR5/2) to greyish brown (10YR5/2), with a dark grey (N5) core. Context 1004. Comparanda: *cf* Monaghan 1987, 2A5?: AD 150/60–90.

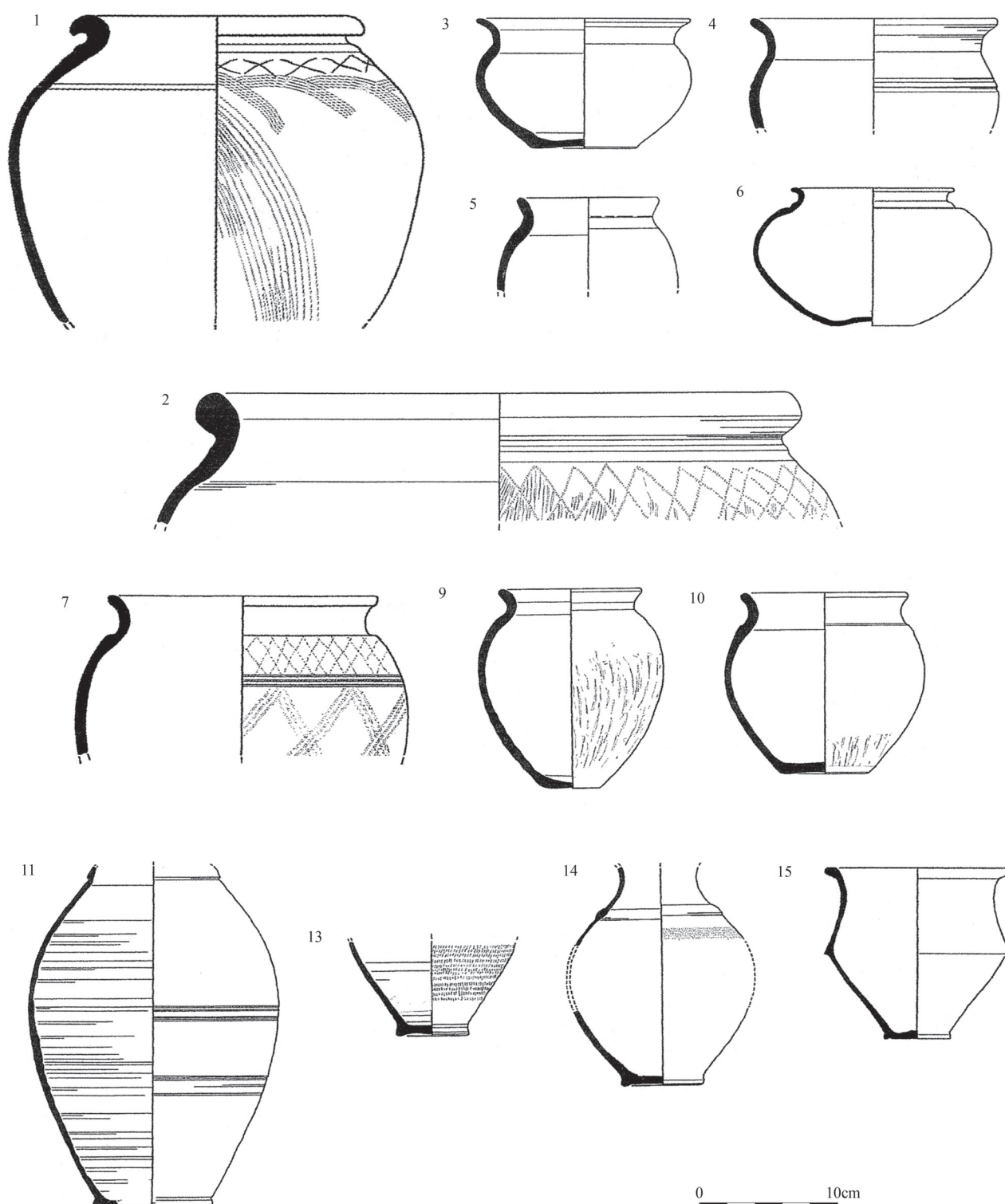


Figure 4. Roman Pottery types from Pit 1005 at Sholden.

12. *R16*. Not illustrated. Similar to 11. Greyish brown to light yellowish brown with a dark grey core. Context 1003. Comparanda: *cf* Monaghan 1987, 2A5?: AD 150/60–90.

13. *R16*. Light brownish grey with a light brown core and a light brownish grey ?slip or wash. Context 1003. Comparanda: *cf* Hoskins *et al.* 2005, fig. 4 H2: *c* AD 75–150 and fig. 5I2: *c* AD 125–75; Monaghan 1987,

- 2A5?: AD 150/60–90; Pollard 1988, fig. 42 no. 150: late second to early fourth century.
14. *R16*. Dark grey with reddish brown core edges, showing through on surface. Context 1004. Comparanda: *cf* Lyne 2008, fig. 6.4 no. 72: AD 150–200; Miles 2004, fig. 9 nos 65–6: AD 80/90–120 and 100/110–130/150; Monaghan 1987, 2A3.2?: AD 100/110–130/50; Pollard 1988, fig. 42 no. 145: second to mid- or late third century.
 15. *R16*. Light brownish grey with a dark grey core. Context 1004. Comparanda: *cf* Lyne 2008, fig. 6.7 no. 130: AD 150–200; Miles 2004, fig. 9 no. 68: first century (Richborough); Monaghan 1987, 2G: late first to early second century; Philp 1981, fig. 64 no. 664: first half second century (Richborough); Pollard 1988, fig. 41 no. 121: late first to early second century.
 16. *R16/R17*. Not illustrated. Similar to 15 but reddish brown (5YR5/4) to grey (10YR5/1). Context 1004.
 17. *R16*. Dark grey to very dark grey with a greyish brown core. Contexts 1004 and 1025 (pit 1023). Comparanda: *cf* Monaghan 1987, 5D3.3: AD 120/50–170/90; Pollard 1988, fig. 40 no. 112: *c* AD 120–210.
 18. *R16*. Dark grey to very dark grey with a dark greyish brown core. Context 1003. Comparanda: very common form, eg Barber 1998, fig. 5 no. 31; Booth 2009, fig. 9 no. 20, 69: late second to third century; Frere 1970, fig. 11 no. 26: *c* AD 260–75; Hoskins *et al.* 2005, fig. 4 G2: *c* AD 150–225; Lyne 2008, fig. 6.5 nos 97–100, fig. 6.7 no. 140, fig. 6.8 nos 150–2: AD 150–200; Monaghan 1987, 5C: AD 120/50–230/50; Philp 1957, fig. 5 nos 33–5: Antonine; Philp 1981, fig. 56 nos 418–28: AD 120 and after; Pollard 1988, fig. 49 nos 181 and 183: late second to mid-third century.

5.5 Oxidised wares (Fig. 5)

19. *R16/R17*. Reddish yellow. Context 1004. Comparanda: *cf* Monaghan 1987, 3A3.2 (grey ware): AD 170/90–210/30.
20. *R6.3 variant?* Pink with a light red core. Context 1004. Probably same vessel as sherds in context 1024 (pit 1023). Comparanda: *cf* Frere 1970, fig. 11 no. 10: late Antonine type; Lyne 2011, fig. 10 no. 108, assemblage 20, *c* AD 150–200; Philp 1981, fig. 61 no. 558: AD 70–130 (Colchester) and fig. 67 no. 746: AD 90–140 (Richborough); Pollard 1988, fig. 43 no. 161: mid-second to early third century; Savage 1998, fig. 8 nos 16–17: mid- to late second century.
21. *R6.3?* Very pale brown with a reddish yellow and internal surface. Context 1003.
22. *R6.3 variant?* Pink. Context 1004.
23. *R6.3*. Very pale brown. White and grey trituration grits. Context 1003. Possibly same vessel as sherds from context 1031 (ditch 1030). Comparanda: *cf* Pollard 1988, fig. 40 nos 116–18: *c* AD 100–50.

5.6 Other wares (Fig. 5)

24. KOL CC R25. White with a very dark grey to very dark greyish brown colour coat. Contexts 1003 and 1004 (joining sherds).

5.7 Discussion of the pottery from pit 1005

5.7.1 Samian ware

It is evident that several complete or near complete vessels were discarded, perhaps directly, into this pit. A maximum of 14 or perhaps 15 vessels were recorded as follows: Context 1003, 12 sherds, maximum of seven vessels

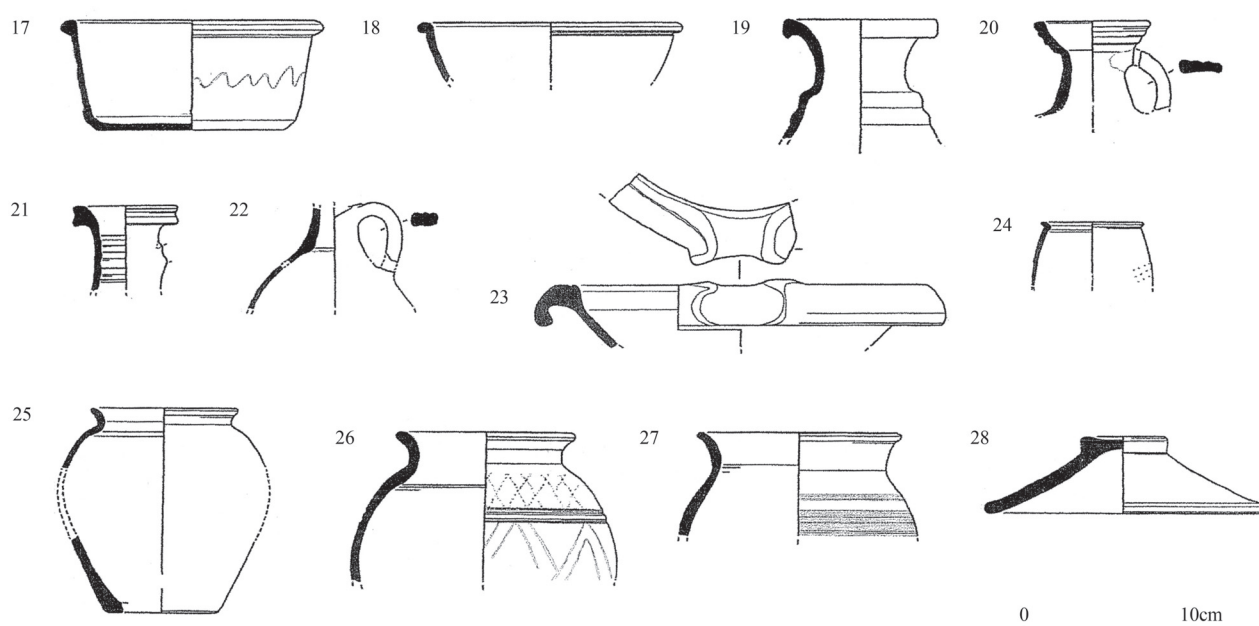


Figure 5. Roman Pottery types from Pits 1005, 1012 and 1023 at Sholden.

(Drag. 27; Drag. 33 × 3; Drag. 18/31 or 31; Drag. 31; Drag. 36); Context 1004, 31 sherds, maximum of eight vessels (Drag. 33; Drag. 18/31–31; Drag. 18/31 or 31 Drag. 31 × 2; Drag. 37 × 3).

The earliest sherd is the Drag. 27 cup (from 1003) which was heavily worn through use, and also perhaps the most battered sherd from the pit. The form was current only until c AD 160; this vessel may have been old when deposited. The dish forms Drag. 18/31 and Drag. 31 can also shed some light on the dating of these fills. Drag. 18/31 like Drag. 27 ceased in production around AD 160. There is clearly a progression from the shallower Drag. 18/31 to form 31 which is the deeper and has a more pronounced kick in the base. Of the six dishes from the pit none are typical of form 18/31; one almost complete example, with a stamp of Sextus v, is transitional between the two forms; given the potter's date range of AD 155–200 this dish probably comes from the first 20 or so years of that range. The Drag. 31 represented by a base stamped by Aeternus falls in the same range. The other dishes, single rim sherds of form 31 and one which could not be assigned to either dish form, are less easy to date closely but are certainly Antonine.

It is noteworthy that none of the dishes are of the rouletted variants Drag. 18/31R or 31R, the latter not introduced until c AD 165. The other closely datable vessels are the decorated bowls. Of the three recovered, one with a mould stamp of Annunus ii may well have been complete (or all present) when discarded although only about three quarters of the bowl was retrieved. This potter's work is dated AD 150–80; the other two decorated vessels are also Antonine in date; one probably the work of Casurius (AD 160–90), the attribution of the third is less certain but there are links with Servus III (AD 140–60). Analysis of all of the samian from this pit (Fig. 6), spreading the dates over 5 yearly intervals to give an average of the samian lost shows that 60% of the samian was dated between AD 150 and AD 175 (80% from

AD 140–180). The greatest 5 year loss period (13.7%) is 155–160. It therefore seems probable that a date for the deposit lies in the third quarter of the second century.

5.7.2 Other wares

Grog-tempered wares were produced and used in the East Kent area from the Iron Age and well into the Roman period (Booth 2009, 5ff; Pollard 1988, 212, 11A; Lyne 2008, 207). Fabric *B2* was replaced by fabric *R1* during the third quarter of the second century and the late Roman fabric (*LR1.1*) appears around the mid-third century. Illustrated vessels 9 and 10 which have wiped surfaces are probably fabric *R1* while others may be *B2* survivals in use; the various parallels for the other illustrated vessels 1–8, indicate that this was a common occurrence. Many of the various reduced ware vessels (*R16*) can be paralleled in the products of the Thameside kilns (Monaghan 1987), including vessels in (*R14*) BB2 (Fig. 5 no. 17). Other reduced wares and the oxidised wares are most likely to have been produced in the Canterbury kilns (*R5*, *R6*). The mortarium is either from Colchester or is an eastern Kent product (*R63*).

5.7.3 Deposit characteristics

Table 3 shows that fragments from some 55 different vessels occur in the pit. One is almost complete and many others are substantially complete or are represented by large fragments. A high proportion of the vessels are from tableware types such as cups, dishes and bowls. In addition, the samian ware vessels (see Fig. 6) include slightly more cups than dishes (on rim EVEs) which, based on Willis' data (2005, 8.2.6, chart 17), is a functional profile sufficiently unusual to perhaps suggest there is something special about the deposit. The pit was fully excavated, however, so in fact it probably does not contain enough complete vessels to warrant being considered in any way 'special'. The amount of tablewares, together with the proportions of the different fabrics, does suggest

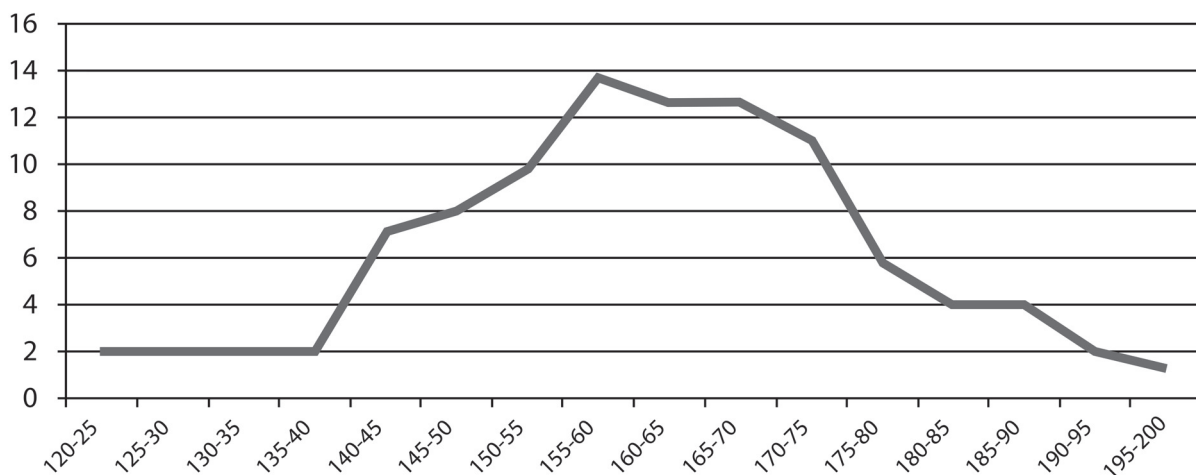


Figure 6. Percentage of samian ware lost per 5 year interval for Pit 1005 (all samian).

Table 4. Pit 1005 at Sholden: Quantification by fabric

Fabric	No. of sherds	% of pit group	Weight (grams)	% of pit group	Rim EVE	% of pit group
Grog	336	40.8	10684	54.7	5.33	31.7
Reduced	251	30.5	2400	12.3	3.47	20.6
Oxidised	160	19.5	3482	17.8	3.11	18.5
BB2?	10	1.2	478	2.4	0.69	4.1
LEZ SA 2	52	6.3	2092	10.7	4.15	24.7
KOL CC	8	1.0	32	0.2	0.07	0.4
Amphora	5	0.6	356	1.8		
Totals	822		19524		16.82	

Table 5. Pit 1012 at Sholden: Quantification by fabric

Fabric	No. of sherds	% of pit group	Weight (grams)	% of pit group	Rim EVE	% of pit group
Grog	6	9.4	130	14.3		
Reduced	52	81.2	324	35.8	0.26	100
Oxidised	4	6.2	20	2.2		
Amphora	2	3.1	432	47.7		
Totals	64		906		0.26	

Table 6. Pit 1023 at Sholden: Quantification by fabric

Fabric	No. of sherds	% of pit group	Weight (grams)	% of pit group	Rim EVE	% of pit group
Grog	78	59.5	2188	81.4	2.64	64.7
Grog/grey?	4	3.0	44	1.6	0.23	5.6
Reduced	19	14.5	218	8.1	0.23	5.6
Oxidised	25	19.1	108	3.9	0.54	13.2
BB2?	1	0.8	88	3.3	0.20	4.9
LEZ SA 2	4	3.0	40	1.5	0.24	5.9
Totals	131		2686		4.08	

Table 7. Cremation 1007 at Sholden: Quantification by fabric

Fabric	No. of sherds	% of group	Weight (grams)	% of group	Rim EVE	% of group
Flint	1	1.1	6	0.5		
Grog	46	49.4	894	69.7	1.00	83.3
Oxidised	38	40.8	74	5.8	0.20	16.7
LEZ SA 2	8	8.6	308	24.0		
Totals	93		1282		1.20	

that the occupation from which the pit material derived was a mixture of utilitarian and higher status activities. A third quarter of the second century date for the deposit is suggested by the samian ware. While some of the other pottery is likely to be residual or survivals in use at this time, much would also fit this date.

6. Specific features: Pit 1012, layer context 1013

6.1 The pottery from pit 1012 (Fig. 5)

A much smaller quantity of pottery was recovered from pit 1012. Grey wares predominate and the only recognisable vessels are jars, one in grog-tempered ware and two in grey ware. A second half of the second century date for deposition is probable.

25. *R16*. Dark grey with reddish brown core, showing through on the surfaces. Context 1013. Comparanda: *cf* Lyne 2008, fig. 6.9 no. 165: AD 150–200; Monaghan 1987, 3J: AD 110/20–150/90; Philp 1981, fig. 62 no. 606: Antonine (Richborough).

7. Specific features: Pit 1023, layer contexts 1024 and 1025

7.1 The pottery from pit 1023 (Fig. 5)

Pit 1023 contains the second largest group of pottery after pit 1005. The samian ware vessels comprise a Drag. 18/31 dish dated AD 120–60 and a Drag. 37 ovolo fragment dated AD 120–200. Grog-tempered jar 26 is similar in form and decoration to vessels 7 and 8 from pit 1005 (see Fig. 4). The reddish yellow ware includes a small flagon with a grooved, disc-type rim similar to one from Canterbury (Philp 1981, fig. 69 no. 800). The deposit has a mixed range of vessel types, though not as wide as that from pit 1005, and includes the only two lids (one possible, Fig. 4 no. 28) from the Sholden assemblage as a whole. The samian ware suggests it may be earlier in date than pits 1005 and 1012.

7.2 Grog-tempered ware (Fig. 5)

26. *B2*. Very dark grey to dark brown with reddish brown core edges. Context 1024. Comparanda: *cf* Lyne 2011, fig. 10 nos 101–2, assemblage 20, *c* AD 150–200.
27. *B2*. Reddish yellow external surface and a brown internal surface with a grey core and yellowish red edges. Very hard, possibly overfired or burnt. Context 1024.
28. *B2/R1*. Very dark grey to dark brown to brown. Context: 1024. Comparanda: *cf* Lyne 2008, fig. 6.7 no. 125: AD 150–200; Pollard 1988, fig. 12 no. 8: Late Iron Age to first century AD. Possibly a lid.

8. Specific features: Cremation 1007

8.1 The pottery from cremation 1007

An urned cremation burial (*cf* Fig. 2) of an adult male was found with two accompanying vessels comprising a samian dish and a flagon (*cf* Jeffery 2015, 94–5). Only the lower part of the grog-tempered (*B2*) cremation urn survived. The oxidised ware flagon occurs in a very friable reddish yellow ware (*R6.1*), this being a small flagon similar, as with the vessel from pit 1023, to one from Canterbury (Philp 1981, fig. 69 no. 800). The fabric appears slightly soft, perhaps underfired.

S9. Drag. 36. LEZ SA 2 (*R43*). *J.M. Mills* writes: It seems that this vessel was complete when deposited, but unfortunately was damaged during the discovery process. The surfaces are heavily etched, especially the rim and

much of the interior base; patches of the exterior wall are damaged to a lesser extent than the interior. The footring and the edge of the rim are almost void of slip – the feel is rough as if caused by acid soil conditions rather than use-wear. That this vessel accompanied a cremation burial is not surprising in the light of its condition, however, it does not bear scorch or burn marks or discolouration from burning so it is suggested that some localised soil condition was responsible for the etching of the vessel surfaces. There are no calcareous deposits often found on vessels from inhumation burials, presumed to be from standing water within the grave.

The vessel appears to be of ‘first’ quality; it has been observed that grave accessory vessels are sometimes imperfect, perhaps with uneven footrings or poorly finished in some way. This is not the case here. Despite being badly damaged on one side there is no evidence for any deliberate damage or chipping for the ‘dedication’ of the vessel. There appears to have been no graffiti although there are some long ‘score’ marks internally; given the other modern damage to the vessel these are unlikely to be ancient.

The Drag. 36 dish form is a relatively common grave accessory/grave-good. The slip-trailed leaves around the rim reflect the wreaths and garlands which decorate sarcophagi and tombstones, as well as the evergreen leaves and twigs which have been found in graves (Bird 2013, 335). It has also been observed that on rural sites in the south-east of Britain, the deposition of samian vessels with cremations and inhumations is part of the usual rite; Cool and Leary suggest that cremation burials in the rural south-east ‘have a disproportionate amount of graves with samian’ (Cool and Leary 2012, 312; *cf*

Willis 2005, chapter 9), and note that dishes are the most common vessel type encountered. Thus this dish may be seen as a grave accessory type consistent with other examples from rural sites in south-east Britain, bearing the funerary symbolism of a wreath of leaves. The fabric of this particular dish suggests that it is of a Hadrianic to early Antonine date.

9. Discussion of the samian ware from the 2013 excavations

The samian assemblage from this investigation at Sholden is quite small with a maximum of 18 or 19 vessels, of which six were stamped, from just four contexts. The majority are from a single feature, pit 1005, with a single complete vessel coming from cremation burial 1007 and the remaining sherds from layer 1025. All of the samian is of second century date and was made in the kilns at Lezoux in Central Gaul. The Drag. 36 which accompanied the cremation burial may pre-date the deposit in pit 1005 by a few decades.

With the exception of the dish from the cremation, the samian is in good sound condition, little of it suffering from post-depositional abrasion or damage to the slipped finish. Again, with a single exception (the Drag. 27 cup from 1003) the sherds exhibit very little in terms of use-wear, the footrings of several of the vessels are worn, but the interiors of the vessels do not show signs of heavy or prolonged use. None of the sherds are prepared for leaded repairs, and none are burnt. There does not seem to be any residual samian.

Despite the small size of this sample it is impossible not to be aware of the dominance of dish forms when

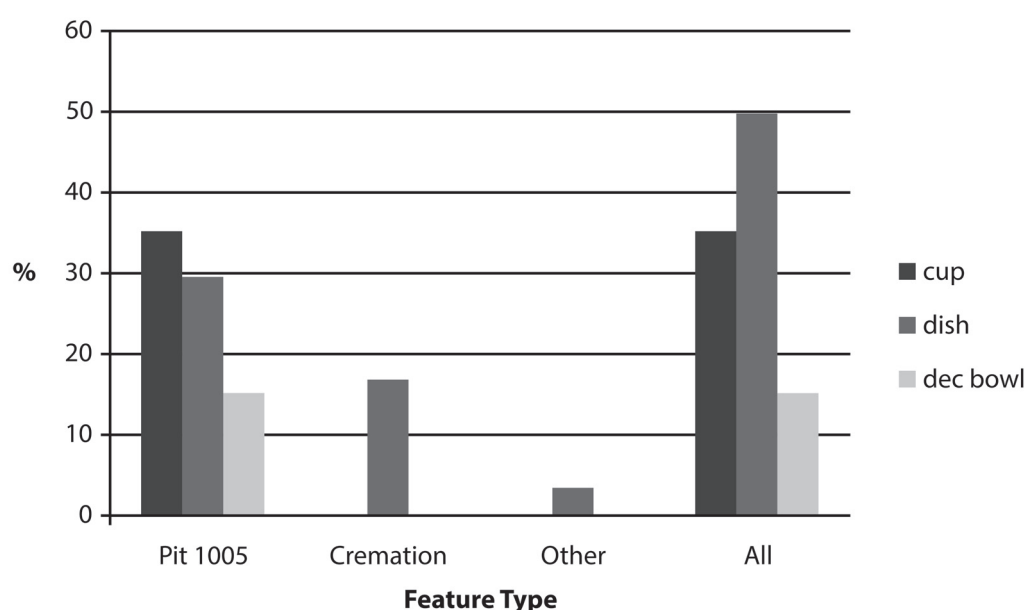


Figure 7. The samian ware by vessel function shown using rim EVEs as the measure (rim EVEs as a percentage of the Total EVEs).

considering the functional class of the vessels. In his study Willis (2005, 8.2.6, chart 17) notes that the vessel function profile for rural sites is characterized by a preponderance of dish forms, averaging 47%, with cups making 25% and decorated bowls around 20%. As regards the profiles shown in Figure 7, the complete dish from cremation burial 1007 perhaps skews the data in favour of dishes.

10. Conclusion

The groups reported here include a high proportion of comparatively well-preserved forms, many in fabrics that can be paralleled within East Kent. Samian ware is prominent, together with other imports including amphorae and a Lower Rhineand beaker. The presence of these imports probably relates to the proximity of the villa at Hull Place, where higher status items might be expected. The dating evidence suggests deposition in the early to mid-Antonine era, or possibly slightly later, for these groups. The villa site was in use at this time (Parfitt 2009a; 2009b), though the precise relationship between the features excavated at the present site and the known villa buildings some 260m to the north remains unclear (Jeffery 2015, 98). Grog-tempered pottery occurred in similar proportions at both this site and at the villa, but while there are other consistencies in the types present the pottery from the villa site shows a longer chronology than seen with these groups (Jeffery 2015, 98).

Acknowledgements

The site location figure and excavation plan (Figures 1 and 2) were prepared by Cate Davies on the basis of illustrations by Headland Archaeology. The pottery illustrations were prepared by Mr R. Read and were formatted for publication in this Journal by Cate Davies, who redrew Figure 3 no. 1. The author would like to thank the developers, Ward Homes, and Matt Smith of CgMs for allowing this report to be published and Julie Franklin, Georgina Barrett, Joe Abrams and Caroline Norrman of Headland Archaeology for providing information which facilitated its production.

Bibliography

- Barber, L. 1998. An early Romano-British salt-working site at Scotney Court, *Archaeologia Cantiana*, 118, 327–54.
- Bird, J. 2013. Samian in religious and funerary contexts: a question of choice, in M.G. Fulford and E. Durham (eds) *Seeing Red: New economic and social perspectives on Gallo-Roman terra sigillata*, London, 326–39.
- Booth, P. 2008. Late Iron Age and Roman pottery, in P. Booth (ed.) *Ceramics from Section 1 of the Channel Tunnel Rail Link. Kent, CTRL scheme-wide specialist report series*. ADS, CTRL digital archive. Archaeology Data Service, <http://ads.ahds.ac.uk/catalogue/projArch/ctrl>
- Booth, P. 2009. Roman pottery from the Channel Tunnel Rail Link section 1, Kent, *Journal of Roman Pottery Studies*, 14, 1–26.
- Cool, H.E.M. and Leary, R. 2012. Aspects of the use of samian pottery in Romano-British funerary practices, in D. Bird (ed.) *Dating and Interpreting the Past in the Western Roman Empire. Essays in Honour of Brenda Dickinson*, Oxford, 305–18.
- Frere, S.S. 1970. The Roman theatre at Canterbury, *Britannia*, 1, 83–113.
- Hartley, B.R. and Dickinson, B.M. 2008–12. *Names on Terra Sigillata. An index of makers' stamps and signatures on Gallo-Roman Terra Sigillata (Samian Ware)*, Bulletin of the Institute of Classical Studies Supplement, London.
- Hoskins, R., Holman, D. and Parfitt, K. 2005. A Roman cremation cemetery at Walmer, *Archaeologia Cantiana*, 125, 361–80.
- Hull, M.R. 1963. *The Roman Potters' Kilns of Colchester*, Reports of the Research Committee of the Society of Antiquaries of London, 21, Oxford.
- Jeffery, E. 2015. Evidence for Roman domestic activity in Sholden, probably related to the villa at Hull Place, *Archaeologia Cantiana*, 136, 87–100.
- Lyne, M. 2008. Roman and medieval pottery, in P. Booth, A-M. Bingham and S. Lawrence, *The Roman Roadside Settlement at Westhawk Farm, Ashford, Kent: Excavations 1998–9*, Oxford Archaeology Monograph 2, 207–58.
- Lyne, M. 2011. The Roman villa at Minster in Thanet: Part 8: The pottery, *Archaeologia Cantiana*, 131, 231–75.
- Miles, A. 2004. Excavations on the Romano-British industrial site at Broomhey Farm, Cooling, *Archaeologia Cantiana*, 124, 309–42.
- Monaghan, J. 1987. *Upchurch and Thameside Roman Pottery. A ceramic typology for northern Kent, first to third centuries AD*, BAR British Series 173, Oxford.
- Oswald, F. 1936–7. *Index of Figure-Types on Terra Sigillata ('samian ware')*, Liverpool.
- Parfitt, K. 2009a. Excavations at the Hull Place Roman villa, Sholden, 2005–7, *Kent Archaeological Review*, 176, 120–4.
- Parfitt, K. 2009b. Preliminary report on excavations at Hull Place Roman Villa, Sholden, *Archaeologia Cantiana*, 129, 103–112.
- Perrin, R. 2015. Part of 'Finds and environmental samples', in E. Jeffery, Evidence for Roman domestic activity in Sholden, probably related to the villa at Hull Place, *Archaeologia Cantiana*, 136, (87–100), 95–6.
- Philp, B.J. 1957. Recent discoveries at Reculver, *Archaeologia Cantiana*, 71, 167–184.
- Philp, B.J. 1981. *The Roman Forts of the Classis Britannica at Dover 1970–7*, Dover.
- Pollard, J. 1988. *The Roman Pottery of Kent*, Kent Archaeological Society Monograph 5, Maidstone.
- Rogers, G.B. 1974. *Poteries Sigillées de la Gaule Centrale I. – Les motifs non figurés*, 28th supplement to *Gallia*, Paris.
- Rogers, G.B. 1999. *Poteries Sigillées de la Gaule Centrale II. – Les potiers (vols I & II)*, Cahiers du Centre Archeologique de Lezoux, 1, Lezoux.
- Savage, A. 1998. The Roman pottery, in A.J. Hicks, Excavations at Each End, Ash, 1992, *Archaeologia Cantiana*, 118, (91–172), 132–50.
- Stanfield, J.A. and Simpson, G. 1990. *Les Potiers de la Gaule Centrale*, Revue Archéologiques Sites, Hors-série no. 37, Gonfaron.

- Symonds, R.P. and Wade, S. 1999. *Roman Pottery from Excavations in Colchester 1971–86*, Colchester Archaeological Report 10, Colchester.
- Terrisse, J-R. 1968. *Les céramiques sigillées gallo-romaines des Martres-de-Veyre (Puy-de-Dôme)*, XIXth supplément to *Gallia*, Paris.
- Tomber, R. and Dore, J. 1998. *The National Roman Fabric Reference Collection: A handbook*, London.
- Tyszler, L. 2013. *Terra sigillata* in Poland: Issues of provenance, importation and reception in *Barbaricum*, in M.G. Fulford and E. Durham (eds) *Seeing Red: New economic and social perspectives on Gallo-Roman terra sigillata*, London, 306–25.
- Ward, M. 2008. The samian ware, in H.E.M. Cool and D.J.P. Mason (eds) *Roman Piercebridge: Excavations by D.W. Harding and Peter Scott 1969–1981*, Durham, 169–96 (with samian catalogue on CD at Chapter D9, The pottery: Part 1: The samian pottery, and accessible online at the Archaeological Data Service).
- Willis, S.H. 2005. *Samian Pottery, a Resource for the Study of Roman Britain and Beyond: the results of the English Heritage funded Samian Project. An e-monograph, Internet Archaeology*, 17. http://intarch.ac.uk/journal/issue17/willis_index.html

Bread and circuses, cutlets and sausages? Romano-British prefabricated ovens and ceramic baking plates

Jane Evans, with Alison Heke and Andrew Peachey

Abstract

Evidence for cooking methods can provide an insight into wider social and cultural practices, and an understanding of the oven structures used informs interpretation of the pottery evidence for food preparation and consumption. This paper summarises and reviews recent evidence for the use of prefabricated ovens from excavations in Worcester, Chester and Soham. It builds on Maggi Darling's 2012 study, with the aim of ensuring that this material is more widely recognised and recorded, encouraging further synthetic research.

Keywords: Worcester; Chester; Soham; Roman period; ceramic oven structures; food preparation; cooking

1. Introduction

In her paper ‘Stuffed dormice or tandoori chicken in Roman Britain?’ Maggi Darling (2012) brought to attention a poorly understood aspect of Roman ceramic assemblages, namely ceramic cooking equipment. She discussed a range of known types, including *clibani*, tannur, and other domed ovens, with reference to previous studies (Cubberley *et al.* 1988; Cubberley 1995). The paper highlighted the value of studying this material and the insights it can provide on cooking practices specifically and social aspects more generally. Darling also discussed the problems of such studies; this material is not always recognised or consistently classified, making synthetic studies difficult. She referred briefly to some new finds of Holt-type ovens associated with the amphitheatre at the legionary fortress and *canabae* site of Chester. Detailed analysis has now been undertaken on this material by Alison Heke and a report produced (2017). Significant finds of ceramic prefabricated ovens and baking plates in a Malvernian fabric have also been made subsequently at the Roman Small Town of Worcester (Evans forthcoming), while in eastern England excavations have produced another class of prefabricated oven, constructed from re-used jars/dolia (Peachey 2015, 99–102). All these ovens share some characteristics but there are also significant differences, suggesting they must have been used differently. They also have different dates. The correct terminology for these ovens remains uncertain. It is helpful to follow Darling's suggestion that the terms

clibanus and *testum* be restricted to covers that can be used for *sub-testu* cooking (Darling 2012, 346). The Holt/Chester examples are interpreted as ‘tannur’ (Darling 2012, 349; Precious 2014) or ‘tannur-like’ ovens (Heke 2017), while the Malvern/Worcester ovens and those made from re-used jars fall within the general category ‘other ovens’ or perhaps *furni* or braziers (Darling 2012). These definitions are still up for debate. All seem to represent local solutions to a broadly similar functional need.

This paper brings together the research of the three specialists who have reported on these finds. Alison Heke and Andrew Peachey have kindly allowed elements of their discussions to be incorporated here by Jane Evans. We are also grateful to Jeremy Evans for providing access to his unpublished study of baking plates. The aim is to build on Darling's study and publicise these more recent finds, hopefully encouraging further, more detailed research. There is a need for such finds to be recognised and published; the component parts can easily be mistaken for large storage jars or tiles and have previously been recorded as such.

2. Holt prefabricated ovens: the evidence from Chester

Alison Heke

Excavations in Chester have produced small assemblages of prefabricated oven material in an oxidised ‘tile’ fabric (Jones 2008, 170; Heke 2012). The largest and most

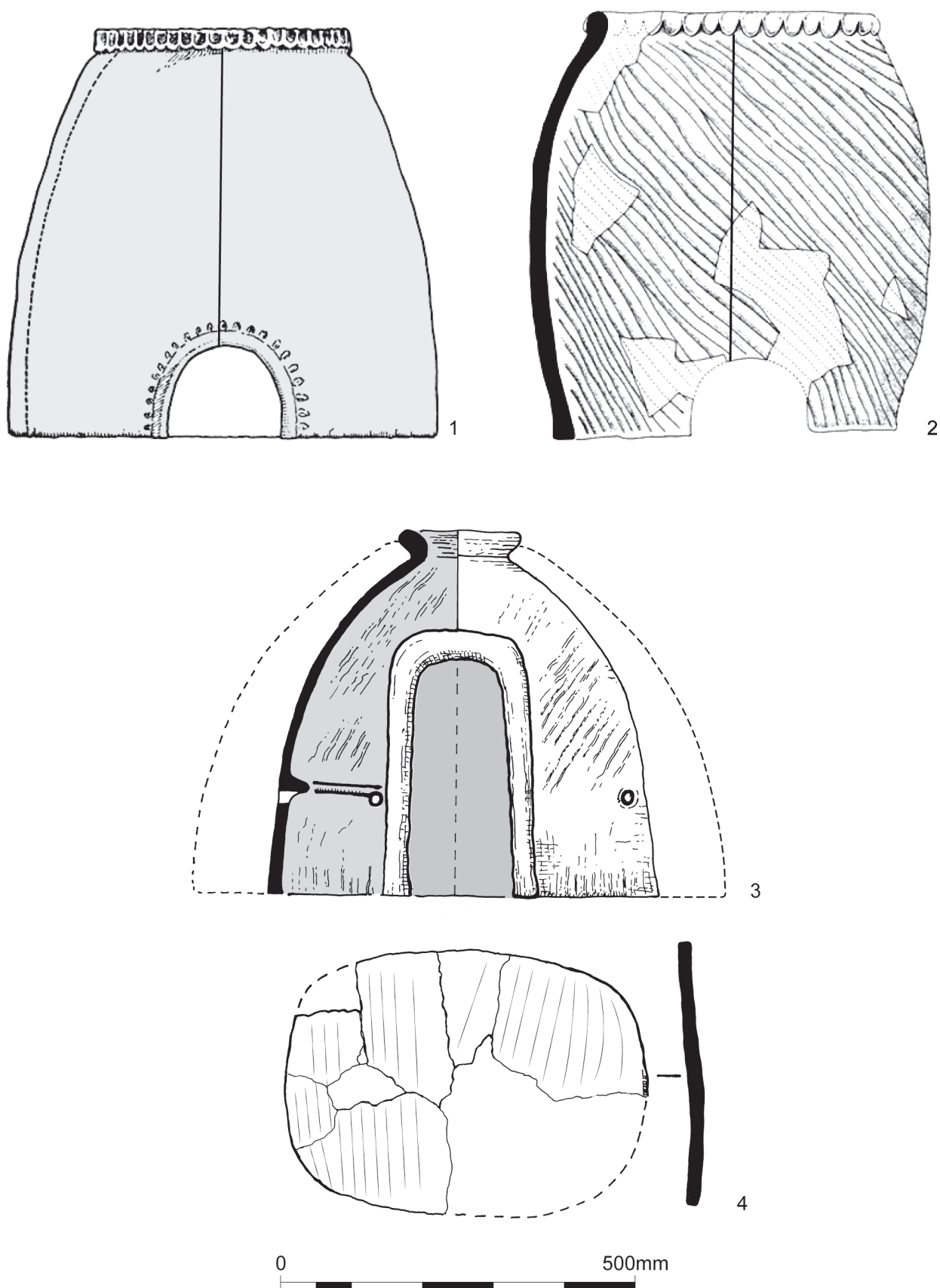


Figure 1. Prefabricated ovens from Holt (1), Prestatyn (2), and Worcester (3); baking plate from Worcester (4). Illustrations prepared by Laura Templeton, Worcestershire Archive and Archaeology Service.

significant group came from excavation of the amphitheatre comprising 30 fragments, including diagnostic elements from at least three ovens (Heke 2017). The Chester ovens are similar to one found at the works dépôt of *Legio XX* at Holt, c 12km south of Chester, and are likely to have been produced there (Grimes 1930, 184, fig. 60, 9; Fig. 1.1). A similar complete oven, probably also made at Holt, is published from a military context in Prestatyn (Blockley 1989, fig. 87, 75; Fig. 1.2). The ovens have a roughly barrel-shaped structure and are characterized by thumb-impressed rims (top opening), distinctive diagonal finger wiping on external walls (although some have smooth, plain, external walls), and plain or flanged bases with a single knife-cut opening or vent (Fig. 1.1 and 2). The two complete examples have a base diameter ranging from c 480–610mm. These ovens would only have been a minor element of the *fabrica*'s output, the main products comprising utilitarian coarse wares, specialist fine wares, mortaria, dolia, and a range of ceramic building material (Grimes 1930, 38). Production at Holt began c AD 90 and although occupation continued throughout the second century, it is not clear when production ended. There is evidence that prefabricated ovens were produced until the kilns went out of use; a possible oven waster found 'incomplete and cracked in kiln' (Grimes 1930, 184) was either one of the last objects fired, or used as backfill when the kiln was abandoned. Some of the Chester amphitheatre fragments came from a phase contemporary with the earliest production.

No *in situ* ovens have been found in Chester, but five fragments came from deposits directly associated with the Roman amphitheatre. A smaller, but probably related, group was recovered nearby, close to a substantial Roman road aligned to the east entrance of the amphitheatre. It seems likely that the ovens from both these sites were used for cooking and heating food to sell to spectators at the arena (Heke and Smith 2009, 4; Heke 2014, 9). Further examples have been found in late first to mid-second century rubbish deposits, excavated just outside the northern defences of the fortress. These are thought to derive from nearby cook-houses in the second century stone rampart buildings (Heke 2017; Heke 2012, 86). Although there are clearly military associations with the production of the ovens at Holt, only one fragment (a rim) has so far been recovered from within the legionary fortress at Chester, associated with a phase of activity dating to the early second century or the AD 160s (Jones 2008, 169–70, fig. 5.1.5). It was found immediately to the north of the fortress bath house, suggesting that it may have been used in the production of hot food for bathers.

3. Malvernian prefabricated ovens and baking plates: the evidence from Worcester

3.1. Recognition and types

Excavations at The Hive in Worcester (Evans forthcoming) produced a much larger assemblage of prefabricated oven

material than found at the Chester sites (1103 fragments weighing 110.3kg). The assemblage has transformed understanding of various ill-defined ceramic fragments recorded previously from Worcestershire: from urban excavations in Worcester (eg Darlington and Evans 1992; Bryant and Evans 2004; Evans [CJ] 2011; Magistrates Court: fabric group G47, Jerry Evans pers. comm.), associated with the salt works at Droitwich (Hurst and Woodiwiss 1992), and from rural sites such as Beckford (Derek Hurst pers. comm.). This new understanding has allowed more recent assemblages to be described with more confidence (Crawford 2014).

Two classes of material were identified; prefabricated oven cores and ceramic baking plates (Fig. 1 Nos 3–4). The assemblage from The Hive is by far the largest group excavated to date. Importantly, a significant quantity (c 20% by weight) was associated with *in situ* ovens, providing the first clear evidence for their use. A number of joining fragments from one demolished oven were also recovered, though not *in situ*; they had been re-used as post packing in a posthole. These and other diagnostic fragments provide the first evidence for how the component parts fitted together, and how the ovens were made. The excavations also produced the first near complete baking plates, only relatively small fragments of which had been previously recorded. The majority of oven material came from stratified later Roman contexts, confirming a late third to fourth century date for their production and use. However, there is evidence elsewhere that the baking plates may have been in use earlier.

Both the baking plates and oven superstructure were handmade in a distinctive Malvernian metamorphic fabric (Peacock 1967, A; Worcestershire Fabric 3.1, <http://www.worcestershireceramics.org>), indicating that they were produced by potters working in the Malvern area, c 10–12km to the west of Worcester. A significant pottery industry is known to have been active there from at least the Iron Age (Peacock 1968), continuing into the Roman period (Peacock 1967). Roman products of this industry included coarsely-tempered Malvernian ware cooking jars, bowls and dishes, often influenced by BB1 forms, and a variety of forms in the finer, Severn Valley ware fabric (Peacock 1967; Webster 1976; Evans *et al.* 2000), as well as ceramic building material (Waters 1963). Fragments that can now be confidently interpreted as deriving from ovens were published from a late Roman kiln site in Malvern Link (Peacock 1967, 24, fig. 4 nos 80 and 86–7); the latter two illustrated were described by Peacock as 'sherds from curious hand-made conical vessels,' postulating that they might be from ovens or associated in some way with pottery production. He noted that they were not in the usual Roman tile fabric, a helpful distinction which is borne out by more recent studies of Roman tile from Worcestershire (Laura Griffin pers. comm.). Further examples were noted at another Malvern kiln in Newland Hopfields (Evans *et al.* 2000,



Figure 2. Some of the oven fragments from Chester amphitheatre. Nos 1 and 2: two adjoining wall fragments with diagonal finger wiping on exterior and smooth interior; thickness 21 mm; Area A (852), SF 9740. Nos 3 and 4: wall fragment with rough diagonal combing/wiping on exterior and sooted interior; thickness 20 mm; Area A (459), SF 9552. No. 5: wall fragment with smoothed exterior; wiped vertically; thickness 20 mm; Area A (46), SF 9545. No. 6: wall fragment with smooth exterior and finger-prints from luting on interior; thickness 20 mm; Area A (369), SF 9825. No. 7: thumb-impressed rim fragment found unstratified in 1966; originally published as the rim of a large medieval ?storage jar (Thompson 1976, 216–7, fig. 41.58). In sum the first three fragments (Fig. 2 nos 1–5) illustrate the different surface finishes, while Fig. 2 no. 6 illustrates the manufacturing method; Fig. 2 no. 7 is the only rim fragment recovered to date and shows the style of decoration adopted in that case. Drawings by Cheryl Quinn, Cheshire West and Chester Council; photographs by David Heke, reproduced by kind permission of Historic England.

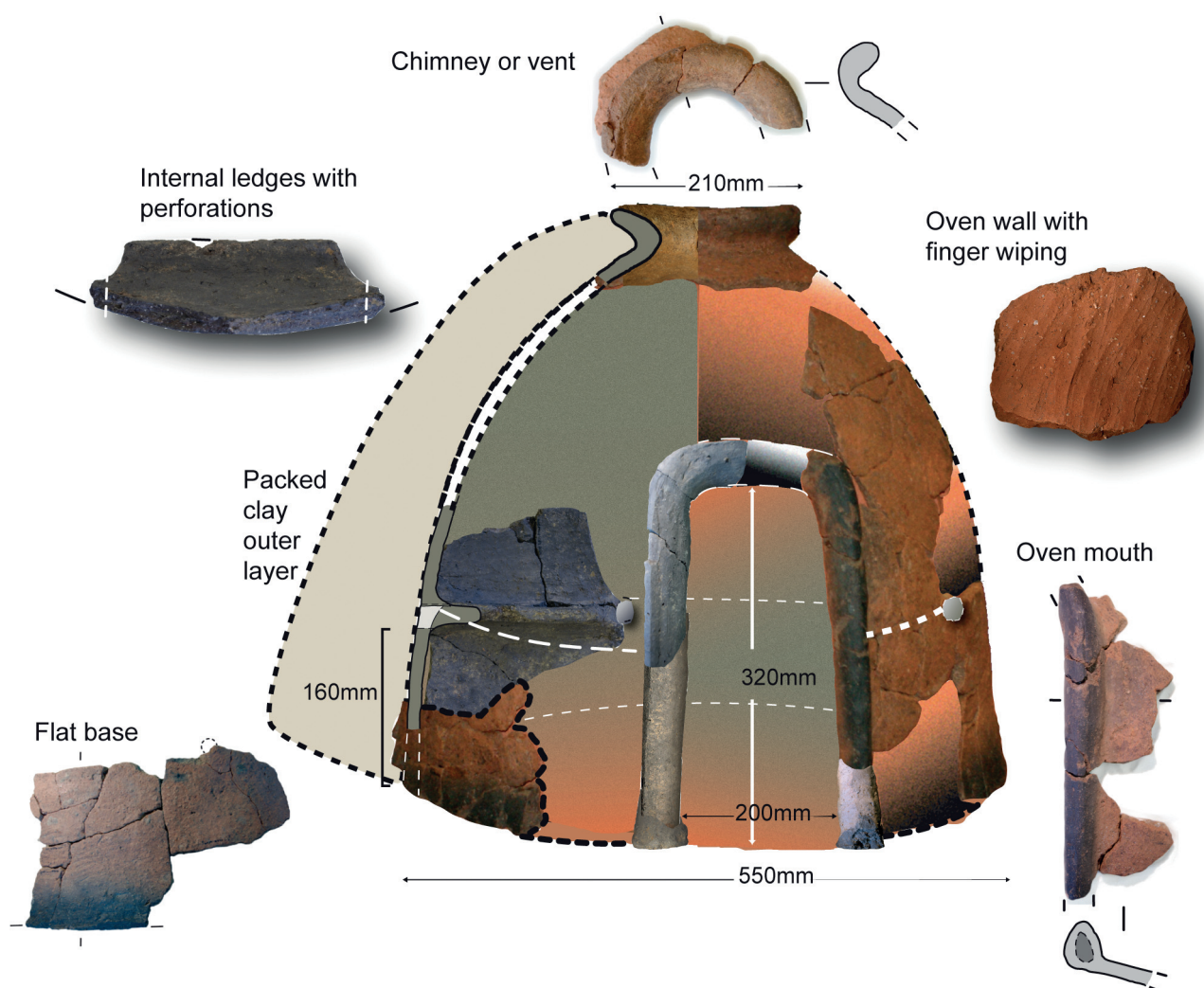


Figure 3. Component parts of the ovens from *The Hive*, Worcester. Illustrations prepared by Laura Templeton, Worcestershire Archive and Archaeology Service.

fig. 37, JLS4 and JLS5). Production at the latter site dated predominantly to the late second to early third century, but later finds were present. These fragments might arguably be associated with later kilns elsewhere in the vicinity.

3.2 Prefabricated ovens

The Malvern/Worcester oven cores have a number of distinctive features (Evans forthcoming). The opening at the top is narrower (diameters 150–230mm) than on the Holt/Chester ovens, with a heavy, curving, flange rim (Fig. 3). The ‘rim’ found in the posthole did not join but the firing and surface finish were exactly the same so it appeared to be from the same oven. It is these rims and the wall fragments that are most likely to be misidentified as being from large storage jars.

Rather than the smaller knife cut openings at the base of the Holt/Chester ovens, these ovens have a tall opening at the base, with a heavy flange rim. The sides of this ‘mouth’ are straight, so some fragments have no curvature, but the top of the mouth is curved. The size

and shape of the flange can vary; some are rounded and others more elongated, some are formed over a roll of clay while others are simply everted. Some flanges had heavy finger wiping. The ‘mouth’ on the *in situ* oven was *c* 260mm wide.

The base of the oven is flat and splayed and smaller base fragments can have little apparent curvature. The bases were characterized by heavy finger wiping and most had a band of fire blackening near the edge, the latter a characteristic of the portable ovens described by Cubberley (1995, 58). The reconstructed oven had a diameter of *c* 520mm, while the base of the *in situ* oven had a diameter of *c* 600mm. The footprint of the latter suggested that the prefabricated oven had been covered in a layer of clay for insulation, once installed in position. One larger base fragment had a natural break *c* 160mm above the base, marking the top of the first, basal, slab of clay and the point where the next slab was joined on. There were small perforations through the wall of the oven at this point. Some wall fragments had internal

ledges, though these were not common. One had small, circular perforations at either end, so may also have been positioned towards the top of the lowest slab. The perforations are small (*c* 8–30mm). Cubberley *et al.* suggest that such perforations were intended to regulate or lower the temperature (1988, 101), and Darling (2012) describes similar perforations on North African braziers, providing a draught of air. Another possibility is that they were intended to support rods, inserted to lift the superstructure or suspend meat while cooking. No parallels are so far known for the internal ledges.

The most common element comprised wall fragments. These are distinguished from pottery by their surface treatment, which is much rougher than usually found on large storage jars. Many fragments displayed distinct finger wipe marks, sometimes very pronounced, usually internal but sometimes external, and sometimes on both faces. A number of wall fragments also had perforations.

3.3 Baking plates

A significant proportion of The Hive assemblage comprised flat, or near-flat, fragments of oven plate (Fig. 4). Similar fragments had been recorded previously from sites in Worcestershire and neighbouring Warwickshire (Evans 2009; 2012; unpublished; Cool 2006, 41–2), but never in such quantity and no complete examples were known. The plates from The Hive characteristically had a wiped upper surface and a coarser, often sanded, underside. There was some variability in this surface treatment, the

wiping on some examples being more pronounced than on others and some being wiped smooth.

Importantly, two near-complete examples were recorded; both sub-rectangular in shape, with rounded corners. One, found in a hollow feature, was reconstructed (Fig. 4 no. 1). The other, found *in situ* forming the base of an oven within a building, was badly shattered but was photographed on site (Fig. 5). Many other fragments clearly came from similarly shaped plates. Consideration was given to whether some curving fragments might be from round rather than sub-rectangular plates as circular clay discs have been described elsewhere, from Worcestershire (Hurst and Woodiwiss 1992; Hurst *et al.* 2011, fig. 18), Oxfordshire and Warwickshire (Evans [J] 1996, 96; 2009; 2011, 44–5, fig. 31.1–3; 2012; unpublished; Cool 2006, 41–2). The diameters of the curving fragments ranged from 180–400mm, comparable with the examples described by Cool (2006). However, the thickness of most curving fragments from The Hive (mostly between 130 and 220mm) suggested larger plates than the diameters indicated, so they are all interpreted as curving corner fragments from sub-rectangular plates.

The knife-trimmed edges of the plates were often thickened, creating a slightly raised lip (Fig. 4 nos 2 and 3). This provides one way of distinguishing the straight edge pieces from tile. Most had plain edges but three had finger-pinched decoration. Some fragments, but by no means all, had surface blackening on the upper surface, the upper surface and edge, and occasionally on

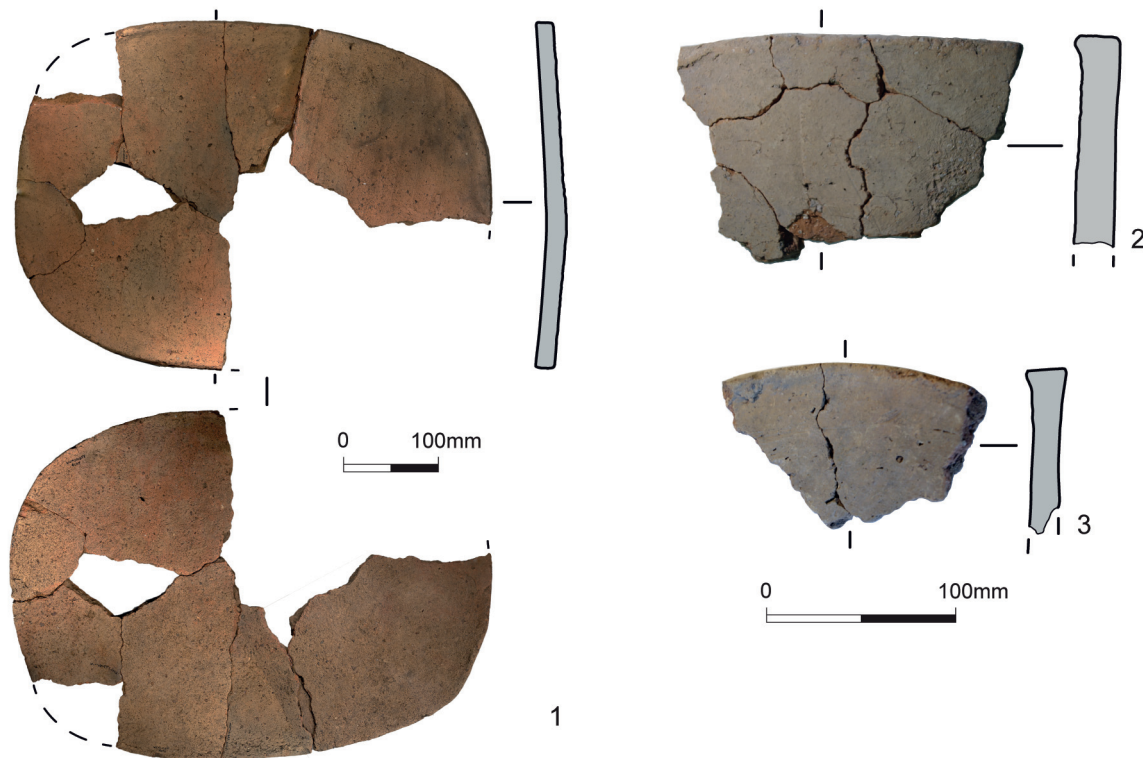


Figure 4. Baking plate (1) and two fragments (2 and 3) from The Hive, Worcester. Photographs and drawings: Laura Templeton, Worcestershire Archive and Archaeology Service.



Figure 5. In situ baking plate from The Hive, Worcester, in base of oven. Photograph: Tim Cornah, Worcestershire Archive and Archaeology Service.



Figure 6. In situ oven CG1019 at The Hive, Worcester. A: with footprint of oven structure; B: with clay floor removed. Photographs: Simon Sworn and Ruth Humphreys, Worcestershire Archive and Archaeology Service.

all surfaces. This contrasts with the evidence from similar plates found in Warwickshire, which only showed signs of heating on the underside (Evans [J] 2011, 44–5). Baking plates could also have been used to seal the oven mouth, to retain heat, which might explain different patterns of burning.

3.4 The Hive in situ finds

Fourteen features identified as ovens or hearths were excavated at The Hive, of which only six produced fragments of prefabricated oven material. A number of those excavated were within small buildings, phased to the mid-second to early third century. Very little oven material was associated with these buildings, suggesting that these earlier features were constructed and/or used differently. There was also more evidence for high

temperature use; associated finds included hammerscale, vitrified clay and smelting slag, suggesting an association with the iron industry.

Four ovens associated with early mid-third to early fourth century activity had associated superstructure and/or oven plates. The *in situ* oven, with the base of the prefabricated superstructure in place (Fig. 6), was located in the central area of an aisled building dated to the latter half of the fourth century. This had fragments of oven and plate incorporated into the clay floor and clay packing surrounding the oven. The incorporation of broken material in the floor would have provided a good heat retaining layer at the base and helped to maintain the fire in the oven. Similar flooring, using compacted pottery sherds and brick fragments, was noted at the base of tannur ovens at Tell Beydar, Syria (Rova 2014,

129–34). There was evidence for longevity of use of the ovens at The Hive; depressions were noted next to some, denoting areas of wear adjacent to possible flues. Another later Roman feature, situated in a small building and identified as an oven, produced a large fragment of oven flue formed from fragments of oven material bonded with clay. There was no evidence, however, that this was attached to a prefabricated oven.

The functional relationship between the ceramic plates and the oven superstructures is not clear; the plates are the wrong shape and size to have fitted inside the ovens. One building contained both the footprint of a circular oven and the *in situ* oven plate described above, suggesting that they could be used side by side. Both types were used in medieval Spain (Gutiérrez Lloret 1990–1), as discussed further below. Collapsed superstructure was found within the oven and further fragments, including baking plate, were incorporated in the clay deposit sealing this. Fragments of both were often found in close association, and broken plate fragments were re-used in the construction of oven floors. However, they are not always found together. Another building contained two ovens. Both incorporated fragments of broken superstructure in the construction cuts and oven floor, but no baking plate was included. Well-preserved oak charcoal was found in some oven contexts. Oak may have been preferred as a fuel supply as it burns well and at a high temperature (Taylor 1981, 52–3).

4. The Soham finds: Storage jars re-used as ovens

Andrew Peachey

The ovens from Holt/Chester and Malvern/Worcester were specifically made for their function. Other approaches were used elsewhere. At Soham, Cambridgeshire, (Peachey 2015, 100, pl. 1) a large storage jar was found *in situ*, placed on its side in a pit and encased in clay to form a small to medium sized oven, with the neck and rim forming a single, narrow opening (Fig. 7). The jar, in Horningsea ware (Tomber and Dore 1998; HOR RE), had a coarse sand temper which, like the prefabricated ovens described above, would have had good heat retention properties. It also had combing on its exterior surface, reminiscent of the prefabricated ovens. There were traces of ash on the interior surface forming the oven floor, thought to derive from pot boilers used to pre-heat the oven, rather than from direct fire. Peachey (above) cites a number of parallels for the re-use of jars in this way. At Elms Farm, Heybridge, Essex, more than 30 similar though smaller ovens were recorded, using jars sunk directly into the ground (Atkinson and Preston 2015, 2.4). These dated to the late first to early second century AD and were associated with non-domestic activity in front of the temple. Elsewhere, large



Figure 7. The Soham ovens, including the *in situ* profile of a Horningsea ware storage jar set in a clay surround. Photograph: Andrew Peachey, Archaeological Solutions Ltd.

storage jars (*dolia*) were set on and in clay platforms, again dating to the late first and second century AD. Peachey (2015) cites examples from the Roman towns of Chelmsford, Essex, Beaumont-sur-Oise, France and Tongeren, Belgium. At Chelmsford, *Caesaromagus*, at least three second century ‘hearths’ were recorded, formed from storage jars set on their side in the ground (Wickenden 1992, 32). Two, arranged in a closely-spaced row comparable to the Soham examples, were located just outside a corridor structure adjacent to the temple. Similar hearths, interpreted on more fragmentary evidence, have been noted elsewhere in the Roman town. The only oven of this type recorded at Vermeulenstraat 2, Tongeren, was situated within a building of uncertain domestic/civilian function in an *insula* on the north side of the town, not far from a temple and the suspected location of the forum (Geert Vynckier, Flanders Heritage pers.comm.). The finds from Beaumont-sur-Oise, c 20km north of Paris, reflect a different pattern of use. There, rather than being associated with public buildings, such as temples or the forum, this type of oven was associated with domestic buildings, out-numbering fireplaces used for cooking (Vermeersch 2013, 116–8). The examples from Beaumont-sur-Oise showed a similar pattern of internal sooting to the Horningsea jars. For these it was suggested that tiles (*tegulae*) or tile fragments may have

been used to create level internal platforms or employed as baking plates.

5. General discussion

5.1 Function and terminology

The first major study of Roman baking covers was published in 1988 by Anthony Cubberley (Cubberley *et al.* 1998). Cubberley was a classics teacher and archaeologist who, by coincidence, had taught at King's School, Worcester, and later retired to the city. Sadly he died in 2006 before The Hive excavations took place, so never saw the significant new Worcester finds and there was no opportunity to discuss the prefabricated ovens with him. *Clibani* and *testa* were referred to frequently in Roman literary records, suggesting that they were a common feature of Roman kitchens, but no contemporary descriptions survive. The terminology has been discussed in some detail elsewhere (Grocock and Grainger 2006, 82; Darling 2012; Heke 2017). Cubberley *et al.* used literary and archaeological evidence to suggest the form of *clibani* and *testa*, and discuss how they were used for *sub testu* cooking, where bread or meat was cooked under an earthenware vessel covered by hot ashes or coals. The precise meaning of the word *clibanus* is unclear; it may have had a specific meaning but could have been used simply to distinguish a portable oven from a stationary *furnus* (Cubberley *et al.* 1988, 101). The prefabricated ovens, or ovens incorporating jars, described here cannot be considered as *clibani* using these definitions. The source of heat, whether hot ashes, coals or pot boilers, seems to have been placed inside the oven, not over the top, so this is not strictly *sub-testu* cooking. Also, the *in situ* evidence for the Malvern/Worcester and Soham-type ovens suggests that although the prefabricated structures were portable enough for initial transportation, they became immobile once placed in the selected spot and covered in a layer of insulating clay. There is also evidence that they were replaced *in situ*, with broken fragments sometimes incorporated in the floor of subsequent ovens. The evidence for this is more equivocal for the Holt/Chester ovens as none have as yet been found *in situ*.

The two most complete portable ovens produced at Holt are 'tannur-like' forms and may have been used in a similar way (Darling 2012, 350; Precious 2014, 64; Heke 2017). The tannur is a clay bread oven of cylindrical or slightly conical shape, open at the top and the base. They are known from the prehistoric, ancient and contemporary Near East and are attested in ethnographic, literary and archaeological sources (Rova 2014, 121; Tkáčová 2013, 3). They occur in different sizes, with base diameters ranging from c 400/500–800mm and heights from c 700/800–1000mm. The oven is placed on the ground, not attached to it, sometimes above a circle of stones. It can be set tilted forwards slightly to facilitate access to the loading hole or 'mouth' at the top.

Tannurs are used primarily for baking flat, round loaves of leavened or unleavened bread (Rova 2014, 122). Fuel is introduced from the top and lit. Once the walls are hot, flat cakes of bread dough are introduced, also from the top, and pressed against the inner wall until baked (Rova 2014, 124). The fire at the base is contained so uses fuel efficiently and the two sides of the flatbread are cooked simultaneously, through conduction by contact with the wall and by radiation and convection from the fire at the bottom (Symons 2004, 74–5). Tannurs can occasionally be used for cooking meat, fish, cakes, legumes and rice, although other devices are preferred (Rova 2014, 124–5).

The Malvern/Worcester ovens are perhaps better described as a *furnus*. This is how Darling describes ovens from Lincolnshire and Cambridgeshire (2012, fig. 4.19) which have the same domed shape and a vertical mouth with a thickened rim. The *furnus* ovens described by Darling, however, are much larger than the Worcester examples; ranging between 850–1000mm compared to 520mm and 600mm at The Hive. The differences in form between the Malvern/Worcester and Holt/Chester ovens certainly suggest they were used differently. The restricted opening at the top of the Malvern/Worcester ovens would have been too narrow to safely insert a hand when the oven wall was hot, and it is more likely that fuel was introduced from the side. Also, the in-sloping wall below the upper opening would have been hard to access and at too steep an angle to support bread dough, had this been applied. Bread could still have been baked in the oven, but more likely on the clay floor. Other foods could also have been cooked inside the oven or on top, if it was used as a brazier. There was some environmental evidence for local river eels having been consumed at The Hive site, raising the possibility that the ovens were used for smoking rather than (or as well as) baking. The function of the internal ledges is uncertain. They might perhaps have supported a metal plate on which bread could have been baked, with the fire below, as in the 'waqdiyah' bread ovens described by Mulder-Haymans (2002, 198; Tkáčová 2013, 37).

Both of these oven types are characterized by having two openings allowing a through current of air, one at the top and one the bottom. The dimensions of the openings vary between the two types, suggesting different usage. Ovens similar to the Holt/Chester examples, with small basal openings, are typical of Roman contexts in the Languedoc, France (Barberan *et al.* 2006). However, excavations at Rábita de Guardamar in Alicante, Spain, produced medieval examples similar to both types (Gutiérrez Lloret 1990–1, fig. 2), suggesting that they may have been used alongside each other, perhaps complimenting each other functionally. These ovens were also made in a coarsely tempered fabric, incorporating dung and straw, and had incised lines on the interior. The Soham-type ovens differ in only having one opening, the mouth of the jar, placed on its side. This supports the suggestion that pot boilers were used to pre-heat the

oven, not direct heat, which would have required a flow of oxygen.

The ceramic baking plates could be the *testelli* referred to in Roman literature (Cubberley 1995, 60). Cubberley quotes Ovid's description of a baking technique where 'the hearth itself baked the bread which was put under the ashes, and a broken tile had been lain on the floor' (Cubberley 1995, 67). He also notes that similar plates were used for baking buns in recent times, the bun being put on the plate and cooked in the embers. The *in situ* plate supports this interpretation and was perhaps used in the same way as 'tiled hearths' from Caistor-on-Sea (Darling 2012, 347). Similar baking plates are also used in the Arabic world and are found, for example, in medieval contexts from archaeological excavations in Spain (Gutiérrez Lloret 1990–1, 171–3).

The archaeological evidence suggests that adding a tiled base was a common 'sophistication' of the simple hearth (Perring 2002, 196). The late fifth/early sixth century hearths at Wroxeter baths basilica, associated with the dismantling of the basilica, are a good example of this. Here, layers of short-term hearths with tiles incorporated into the surface were interpreted as places where flat bread was cooked, supported by the presence of rye grains in the hearth debris (Barker *et al.* 1997, 135–8). Ceramic plates from sites in Warwickshire (Ferguson 1994, fig. 69.2; Evans [J] 1996, 96; 2009, 129–33; 2011, 44–5, fig. 31.1–3; 2012, 70) and Oxfordshire (Sanders 1979, 54, fig. 28.124–7) have also been interpreted in this way, described as 'chapatti' discs for baking unleavened bread (Evans unpublished, cited in Cool 2006, 41–2). Elsewhere, similar plates are associated with ovens: at Chesterton, Cambridgeshire, semi-circular plates were interpreted as oven floors or associated warming stands (Perrin 1999, fig. 74.504), and at West Heslerton, North Yorkshire, flat plates were associated with a stone-built bread oven.

5.2 Manufacture

The various ovens described above all form the core of an oven structure. Other studies suggest that this core is the most important part of the oven, higher quality cores being 'less susceptible to breakage and fragmentation and, since this is the hottest part of the oven, higher quality cores last longer' (Parker 2011, 606, cited in Tkáčová 2013). Darling (2012) also observed that ovens would need to have been made by skilled potters. This is true of both the Chester ovens, made by legionary potters at Holt, and the Worcester ovens, made by potters working in the longstanding Malvern pottery industry. It must be relevant that the wheelmade Malvernian fabric (Worcestershire Fabric 19; <http://www.worcestershireceramics.org>) is also most common in the late third to fourth century, when the ovens were being made. The forms produced were mainly cooking jars, bowls and dishes copying Black-burnished ware types, which could have been used with the ovens. A few of the Languedoc ovens were stamped (Barberan

et al. 2006), suggesting a level of control, official or otherwise. Three names have been found. Two are so far unknown from pottery but one, Tertius appears to have been a common name amongst potters; it has been found stamped on South Gaulish samian from Montans and La Graufesenque, and on a Dressel 2–4 amphora. One of the two fabrics used for these ovens, a moderately coarse sandy ware, is very similar to Gaulish amphorae, while the other is like a *dolium* fabric; again suggesting links with potters. Finds of these ovens are limited to a well-defined, restricted geographical area. Nothing is known of the individual potters who made the ovens at Holt or Malvern, though it has been suggested that the Holt ovens may be influenced by the presence of potters from the eastern Roman world, including Greece, Thrace and Asia Minor (Greene 1977, 124 and 126; Darling 2012, 351). Specialist production of ovens is evident in later periods. In the seventeenth century, for example, earthenware 'cloam' ovens produced at Bideford in North Devon were marketed as far as Wales, Ireland and even the colonies (Grant 1983, 55–6). In modern times, portable bread ovens are still made by specialist potters in Pererueta, in the Zamora province of Spain (Williams and Evans 1991).

Ovens need to be made in coarse fabrics to resist thermal shock and retain heat (Cubberley 1995, 58). The Malvernian fabric, already used for cooking vessels, is very well-suited, with common inclusions of igneous and metamorphic rock. The Holt ovens were in a coarse tile fabric and the Soham-type ovens incorporated jars made in a coarse sand-tempered Horningsea fabric. The oven material found in the East Midlands is in a shelly fabric, and Warwickshire baking plates had organic temper (Evans [J] 2011, 44–5). The ceramic plates recorded from Yorkshire are also described as being in a 'coarse' fabric (Darling 2012).

The Holt/Chester ovens (Fig. 8) are coil-built, a common method for producing tannur ovens (Heke 2017). The oven is built up from the base using coils or loaves of clay. Each stage is allowed to dry before the next is added and the top finished, so the construction and drying process can take several days to complete (Mulder-Hymans 2002, 2 and 16; Tkáčová 2013, 19 and 23–4; Mulder-Hymans 2014, 164; Rova 2014, 122–3). The Malvern/Worcester ovens appear to have been slab, rather than coil, built; a clear structural join can be seen at the top of the more complete base fragments from The Hive). Modern pizza ovens produced at Pererueta in Spain are also built using slabs of clay, and while modern machinery is used to extrude the slabs the ovens are then hand-built. The wet clay is joined and shaped, with one hand inside supporting the wall and the other smoothing the exterior. The clay is then pulled up and smoothed further with a wooden tool, working diagonally up as the potter moves around the base. Once this is complete another slab of clay is added and the upper half worked in to form a dome. It seems likely that the Malvern



Figure 8. Alison Heke and potter Neil Glendenning with his reconstruction of the Prestatyn oven combined with the decorative vent of the Holt example. Photograph: David Heke.

potters would have added the internal ledge before the second band was added, and the perforations may have also been made at this stage. When the upper section is complete, the Pereruella potters add an additional collar of clay to the top and shape this to close the dome. Heavy hand and finger marks can be seen where the collar is joined, which are then smoothed off. A similar collar could have been added by the Malvern potters to form the flanged chimney/vent. The mouth at the front of the Pereruella oven is cut out once the dome is formed, and rolls of clay are pressed around it, to thereby strengthen it. A similar roll of clay can be seen inside the flanges on the Malvern ovens, and this would presumably also have been added at this final stage.

The Pereruella ovens have an integral base, which the Malvern ovens do not. The ceramic plates, however, may have been made in a similar way. At Pereruella, sand is sprinkled on the floor, then a lump of clay thrown down. This is roughly pressed into shape, then flattened by hand, giving distinctive wipe marks. The wet surface is then wiped smooth with a block of wood and the edges are trimmed into shape. The plates from The Hive characteristically had a wiped upper surface and a coarser, often sanded, underside, (Fig. 4 no. 1), suggesting that a similar manufacturing process was used, rather than rolling out plates, as was the method with the seventeenth century ovens from Bideford (Grant 1983, 48). The presence of hobnail impressions and a possible animal print on the Malvern plates suggest that, like tiles, they were left to dry on the ground prior to firing. One fragment had fingerprints and a textile impression on the upper surface, identified as a tabby weave using wool or linen (Alan Clapham pers. comm.), perhaps from a cloth used

to wipe it or an accidental impression from the potters clothing.

The Malvern/Worcester ovens and many of the Holt/Chester ovens are characterized by finger wiping on external surfaces. On the Malvern ovens found at The Hive this was clearly undertaken when the clay was soft. More variation was noted on the Holt ovens found at Chester amphitheatre; some fragments were wiped while the clay was still soft, but others had marks that appeared to have been made with a tool while the clay was drying (Heke 2017). The jars re-used as ovens at Soham may also have been selected because of their combed surfaces. The most likely explanation for this external wiping, supported by evidence from The Hive, is that it acted as keying for an external layer of clay applied to insulate the oven. Heke cites similar interpretations made for finger wiping on tannur ovens from the third millennium BC site of Tell Beydar in north-eastern Syria (Rova 2014, 134) and the combed and incised patterning on the Roman ovens from Languedoc, France (Barberan *et al.* 2006). The thumb-impressed rims on the Holt/Chester ovens, and fingered decoration around the base of *furnus* ovens found in Lincolnshire and Cambridgeshire (Darling 2012, fig. 4.19) may have served a similar function.

5.3 Size

Any discussion of the size and capacity of these prefabricated ovens is limited by the fact that so few near complete examples are known, as well as the lack of a study of Roman oven typologies and sizes in general. Perring (2002, 196) describes hearths and ovens with diameters of *c* 300–500mm. Cubberley *et al.* (1988, 10) suggest there is a chronological trend in the size of

clibani and *testi* found in Italy, with first and second century examples ranging from *c* 350–500mm, third century examples *c* 240–300mm, and later examples smaller again. There does not seem to be a similar trend in the size of the prefabricated ovens described here, based on existing evidence. The early examples from the Languedoc (Barberan *et al.* 2006) range between *c* 540–650mm. The oven from Holt has a base diameter of *c* 610mm, and the oven from Prestatyn *c* 480mm (Heke 2017), while the Malvern/Worcester ovens have diameters ranging from *c* 520–600mm. These are broadly comparable in size to the tannur-type ovens discussed by Tkáčová (2013, 23), which are *c* 400–800mm in diameter at the base, but significantly smaller than the *furnus* ovens described by Darling (2012), which have bases ranging from *c* 850–1000mm. The latter are more comparable with the modern Pererueta ovens at *c* 910mm in diameter. It is interesting reviewing publicity about modern day pizza ovens. Some manufacturers produce three sizes: *c* 600mm, *c* 750mm, *c* 900–1000mm. The publicity for one advertises the small size as suitable for one extra large pizza, claiming that one pizza could be cooked every 90 seconds. Another manufacturer claims that this size would take 20 minutes to heat up, and would retain heat for four hours, or up to 24 hours if insulated. Clearly this is not scientific data, but it does provide a starting point for possible experimental archaeology projects in the future.

5.4 Dating

The ovens found in the Languedoc date between the end of the Republican period and the Flavian period (Barberan *et al.* 2006), while the Holt/Chester ovens date from *c* AD 90. We do not know when production ended at Holt but there is evidence for occupation until *c* AD 135 with a lower level of activity continuing until the end of the second century. They are not, however, common finds at any time. A large handmade vessel in a tile-like fabric found in Lincoln is said to resemble the oven recovered from Holt and it may be contemporary (Grimes 1930, 212, fig. 60.9). A possible argument against this, however, is the fact that this fabric only occurs in very small quantities in the second century, being most common in the mid–late third and early fourth. The re-use of jars as ovens, noted on sites in the East Midlands/South East, is also associated with late first to second century deposits (Peachey 2015). There is some evidence for the use of prefabricated ovens in the East Midlands in the mid–late second to third century; specifically at Wygate, Grandford and Chesterton (Darling 2012). The Malvern/Worcester prefabricated ovens seem to be a distinctly later type. They are associated predominantly with late third to fourth century activity: at The Hive (Evans forthcoming) and other Worcester sites (Darlington and Evans 1992, 68; Buteux 1998, 16; Dalwood *et al.* 1998, 17; Crawford 2014, fig. 30; Magistrates Court, Jerry Evans pers. comm.); at rural sites such as Beckford

(Derek Hurst pers. comm.); and at a Malvern production site (Peacock 1967). Occasional fragments of oven wall were found in mid-second to third century deposits at The Hive and neighbouring City Campus site (Crawford 2014; Evans forthcoming) but no diagnostic fragments of superstructure. Archaeomagnetic dating was undertaken on two of the ovens at The Hive, one in a possible strip building and one in the aisled building. The results, however, were not at all helpful, providing poorly defined dates covering the Roman and post-Roman periods (Greenwood and Batt 2009, appendix 7).

The majority of oven plates found at The Hive and other Worcestershire sites also come from late third to fourth century contexts and a similar date has been suggested for the plates found in Warwickshire and Oxfordshire (Cool 2006, 41–2). There is, however, also evidence for earlier production of the plates. In Droitwich (Hurst and Woodiwiss 1992, 64, fig. 46) two plate fragments were recorded from a mid-first to early second century deposit. There is also evidence from other counties for the use of oven plates from the later first century onwards (Cool 2006, 41–2). They appear to have continued in use through the second to third centuries. At Wyre Piddle in Worcestershire (Griffin 2012) they occur in early to mid-second century layers, the latest Roman activity on the site dating to the later second to early third century. A few diagnostic fragments were found in second to third century contexts at The Hive and City Campus sites, and at Hindlip, to the north of Worcester (Griffin 2015).

5.5 Distribution and social implications

The distribution of this material, and the evidence this potentially provides for the social implications of its use, forms an interesting area for future research, with the proviso that any such analysis is dependent on the degree to which it has been recognised and published.

In Worcestershire, ceramic plates and oven fragments are often recorded on the same sites, suggesting they could be used in association. This is true on urban sites such as Worcester (eg Darlington and Evans 1992; Bryant and Evans 2004; Crawford 2014) and Droitwich (Hurst and Woodiwiss 1992), and rural sites such as Beckford (Derek Hurst pers. comm.) and Hindlip (Griffin 2015). Sites with both oven plate and superstructure have also been recorded in north Gloucestershire, for example the rural site at Wheatpieces near Tewkesbury (Holbrook 2008, fig. 16), and further afield at Chesterton, Cambridgeshire, and West Heslerton, North Yorkshire (Darling 2012).

Plates and prefabricated ovens are, however, not always found together so clearly also functioned independently. In Worcestershire, the highest concentrations of oven material are from the northern suburbs of Roman Worcester, from excavations at City Campus, The Hive, and Magistrates Court (Crawford 2014, Evans forthcoming, Jerry Evans pers. comm.). Some Worcestershire rural sites only produced fragments of plate (eg Griffin 2012; Griffin

2016). In Warwickshire and Oxfordshire, ceramic baking plates were more common on rural sites and were again not associated with oven superstructures (Evans unpublished). More evidence for superstructures may of course come to light now that the component parts are better understood. Jerry Evans' study (Evans unpublished) indicated that ceramic baking plates are a West Midlands phenomenon, centred on Warwickshire and Oxfordshire with Bubbenhall marking a northerly limit. The Malvernian material extends their distribution westward into Worcestershire and north Gloucestershire, but there is little evidence for their use further west in Herefordshire; none were recorded at Kenchester (Wilmott and Rahtz 1985; Laura Griffin pers. comm.) or Wellington Quarry (Griffin 2011). Nor are they found further south in the central and southern Cotswolds (Ed McSloy pers. comm.). The examples from Chesterton (Perrin 1999) and Lincoln (Precious 2014, 64 and 71) extend the distribution further east. This main distribution falls within the 'Central Zone' defined by the Roman Rural Settlement Project (Smith *et al.* 2016, fig. 1.5). This pattern is supported by the data on 'ceramic discs' and 'ceramic plates' collated by the Roman Rural Settlement Project (<http://archaeologydataservice.ac.uk/archives/view/romangl/>), though there has not been time to check the references listed as part of this study. The majority of these are in the Central zone: from sites in Bedfordshire, Buckinghamshire, Cambridgeshire, Gloucestershire, Hertfordshire, Leicestershire, Northamptonshire, Oxfordshire, Somerset, Warwickshire and Wiltshire. Other evidence from the Central Zone suggested a greater level of arable cultivation there; it had one of the highest concentrations of sites where spelt was recorded as relatively abundant, and by far the greatest concentration of corn driers (Smith *et al.* 2016, 400, fig. 3.11, fig. 12.14). The distribution of baking plates may relate to this. Given that the main distribution is across the Midlands, the oven plates from West Heslerton, North Yorkshire (Darling 2012) do seem rather anomalous, but the Roman Rural Settlement Project cites other examples in the north, north-east and north-west.

On existing evidence the oven structures seem to have different geographic and chronological distributions. The first to second century Holt prefabricated ovens are found in North Wales/Cheshire. Fragments of a similar oven type have also been found at Caerleon in South Wales (Zienkiewicz 1986, 82; Compton and Webster 2000, 304). This may be a local product rather than having been produced at Holt. The re-used jars described by Peachey are found in the East Midlands/south-east. The late third to fourth century Malvernian prefabricated ovens, like the oven plates, are found in Worcestershire, north Gloucestershire and perhaps west Warwickshire. Fragments of other prefabricated oven types have been recorded from Catterick, North Yorkshire, (Williams and Evans 1991) and possibly Kingscote in

south Gloucestershire. The latter, an unidentified ceramic from a late second to third century oven fill (building VIII, room 4; Scott 1998, 206, fig. 99, 18.44) was unlike the Malvernian ovens; it was made in a tile fabric and had finger-impressed decoration reminiscent of the ovens from Holt and the East Midlands.

The prefabricated oven structures and re-used jars must have provided a quick and easy solution to setting up an oven. These relatively small ovens would have been heated by an internal fire, which could have been tended and kept going over a long period (Darling 2012), or perhaps re-lit and quickly heated up, as needed. This presumably allowed for a flexible approach, with bread or other foods being produced continuously or as and when needed. These ovens are not on the scale of the permanent structures found in bakeries at Pompeii and are not designed for the same level of production. They would also, presumably, have required less fuel to get up to and maintain temperature. It has been suggested that some of the Chester ovens may have been used alongside the more permanent structures found in the cookhouses of the second century rampart buildings excavated at Abbey Green (Heke 2012), presumably having a different function. Different oven types are known to have been used concomitantly elsewhere; a bakery excavated in Pompeii, which had the expected purpose-built, fixed, domed ovens, also produced an example of a 'portable' oven. This was formed from a cut dolium, placed on the ground on a ceramic tile base and set in masonry (Nicolas Monteix pers. comm.). These ovens do not seem likely to be domestic structures. The extent to which oven cooking was practised by the majority of the Roman population, especially in towns, has been questioned by Hilary Cool (2006, 51). She notes that, where rooms have been identified as kitchens, they are often part of large houses associated with high status residents. The majority of houses probably functioned with a small central fire, probably having changed little since pre-Roman times in some areas of Roman Britain (Alcock 2001). Such hearths would have been multi-functional, used for pot-boiling or spit-roasting food and, if a ceramic plate or tile was used, for some baking. The prefabricated ovens are perhaps the Roman equivalent of the modern festival food stall, designed for more intermittent or seasonal use when gatherings of people occurred. Though presumably relatively quick to set up, these ovens were carefully constructed and there is evidence that they were maintained and replaced. The Worcester examples had a sunken base, with a clay floor incorporating pot sherds and fragments of broken baking plate and oven structure. They were covered in an insulating layer of clay, giving them support and setting them firmly in place. The ovens formed from re-used jars were also carefully designed; placed in sunken floors, with insulated chambers and possible wind breaks. These ovens are thought to have been utilized for some time. Peachey (2015) notes that

at Soham, Chelmsford, Beaumont-sur-Oise and Tongeren the clay cladding seems to have protected the chamber and increased its longevity, while at Heybridge there is evidence for broken chambers (jars) being replaced and overlain by successive jars. At Chelmsford similar ovens were associated with a charcoal filled fire pit (Wickenden 1992, 32), suggesting that they had been carefully structured to form a small industrial space.

Street sellers and ambulant hawkers would have been attracted by the commercial opportunities offered by large gatherings of people, so tended to be found in central areas of towns and cities, clustered around temples, bath houses, forums, circuses, amphitheatres and theatres. This is consistent with the evidence from Chester, where the Holt prefabricated ovens were associated with the amphitheatre and the baths. The fragments recovered during the amphitheatre excavations are thought to have come from temporary stalls or booths set up outside the amphitheatre, preparing hot food and drink for visitors to the arena (Heke 2017). A wall-painting in Pompeii depicts a scene set in AD 59 (Ellis 2004, 383; Holleran 2012, 29), which illustrates portable, temporary stalls serving food and drink outside the amphitheatre. Some were set up beneath the trees, with awnings, while others were under the arches of the amphitheatre where painted inscriptions on the walls indicate that pitches were assigned to stallholders by the *aediles*, officers responsible for regulating public festivals (Rolfe 1899, 190; Jacobelli 2003, 62–3; Wallace 2005, 37), while the [Justinian] Digest [18.1.32] records that temporary stalls required retail licences (Ellis 2004, 383). Street traders sold everyday food at low prices and probably catered chiefly for customers of relatively limited means. The traders themselves were often poor, retailing on a small-scale in order to survive (Holleran 2012, 30). Food was also sold at Roman baths. As is well-known, Seneca complained of the noise caused by the calls of the cake-seller, the sausage-man, the confectioner and assorted other food vendors hawking their wares at the baths at Baiae, in the Bay of Naples (*Epistles* vol. I.56.1–4). A podium outside the entrance to the Sarno Baths in Pompeii appears to have been an egg-seller's stand. A price list, painted onto the wall of a room near the vestibule of the Suburban Baths in Herculaneum, indicates the location of a temporary stall or booth, selling nuts, drinks, hog's fat, bread, cutlets and sausage. Other graffiti from the Suburban Baths make it clear that food could be eaten on the premises, as well as purchased on leaving (Fagan 2005, 33). Another possible association with fortress *thermae* and bath houses generally has been noted at Caerleon, where Mark Lewis has recently reinterpreted a 'jar' rim published by Zienkiewicz (1986, 82, group 25:17 and 83, fig. 31.17) as a probable oven fragment. This was recovered from layers of rubbish filling the *piscina* at the south-western end of the *frigidarium* of the fortress baths, associated with an earlier fourth century phase of activity (Mark Lewis pers. comm.). Further evidence for

the use of prefabricated ovens in public spaces comes from the Languedoc area of France. The ovens there were formed from a removable ceramic dome placed on a separate clay hearth base. Few are from primary contexts but one, from Nîmes, was situated in an open (?public) space, near to a possible *macellum*. Further examples are recorded from *Ambrussum* (Luley 2014, 46) and La Capelière (Barberan *et al.* 2006, 269). The ovens from *Ambrussum* are associated with houses rather than public spaces.

The re-use of jars as ovens seems to have a similar association with public spaces. Peachey (2015) cites evidence from Elms Farm, Heybridge, where more than 30 ovens were recorded, using jars sunk directly into the ground (Atkinson and Preston 2015, 2.4). These, dating to the late first to early second century AD, were associated with activity close-by the temple, in an open area probably used for gatherings and markets. Two of the second century 'hearths' found at Chelmsford, formed from storage jars set on their side in the ground (Wickenden 1992, 32), were also located close to the temple. Further afield, an oven at Tongeren (Geert Vynckier, Flanders Heritage pers. comm.), was situated within a building of uncertain domestic/civilian function in an *insula* not far from a temple. The ovens from Beaumont-sur-Oise are the exception, being associated with domestic buildings rather than public spaces (Vermeersch 2013, 116–8). Modern experiments with this type of oven suggest they are particularly suitable for baking bread, and ideal for producing flat unleavened loaves, especially barley loaves, in large quantities; although other types of bread could also be baked (Sally Grainger pers. comm.). Similar barley loaves are recorded as rations on ostraca from the imperial stone quarry at Mons Claudianus and Mons Porphyrites, Egypt. Here, loaves were transported significant distances and could be consumed fresh or re-hydrated. There is, however, only poorly preserved and fragmentary evidence for bread production and related agricultural holdings in Roman Britain and the Western Empire, particularly when compared to Roman Italy and the eastern Roman Empire (Erdkamp 2005, 22).

There is evidence for on-site cooking in some (work) shops at Pompeii, consisting exclusively of portable devices; terracotta cooking stands (Ital. *forrelli*), bronze tripods and cauldrons, and pottery vessels used in food preparation (Foss 1994, 129 and 200). Some of the Romano-British prefabricated ovens seem to have had a similar use. The ovens at Soham, constructed from re-used Horningsea jars, are thought to have been built to serve a workforce active in the surrounding corn driers and enclosure, in a similar fashion to community (or communal) ovens recorded at Rome and Pompeii (Giancosa 1994, 204). The Holt oven found at Prestatyn was also associated with a workshop, that of a bronze-smith, though this might have served an industrial rather than a culinary function. In Lincoln, the largest group of

oven fragments came from strip buildings, with hearths and oven bases, suggesting an association with large-scale food preparation (Precious 2014, 64 and 71). The ‘furnus’ oven bases and flat plates found at Chesterton and discussed by Darling (Perrin 1999, figs 1–2; fig. 52, 510, 512; fig. 74, 502, 506–13; Darling 2012) are also associated with large barn-like structures.

These examples provide better parallels for the use of the Malvern/Worcester ovens. There is no Roman bath house, amphitheatre, or forum in Worcester, and no known temple in the vicinity of The Hive site, which is in the northern suburbs of the Roman small town. The ovens are associated with a number of buildings that may be small strip buildings and a late Roman aisled building, alongside a road leading to a likely river crossing; perhaps therefore a place that cattle drovers and other traders and travellers passed by. In the later phase of the site, alongside the aisled building, a corn drier was nearby, and various quarry pits, so it is likely that agricultural or industrial workers would have been in the vicinity.

The precise function of the Malvern/Worcester ovens is unknown. Suggested uses have included for baking, as a brazier and for smoking. However, associated environmental evidence from one Worcestershire site has suggested a link with bread making. Excavation at Hindlip, a rural site on the northern edge of modern Worcester, produced a relatively large assemblage of oven material comprising 25 fragments of oven superstructure and 181 fragments of ceramic platter (Griffin 2015). The late third to fourth century occupation layers associated with the oven material also produced fragments of at least four rotary querns, as well as rich environmental samples of cereal chaff (spelt wheat glumes) consistent with flour and bread making (Clapham 2010). The most unusual find was a sherd of Severn Valley ware with a graffito, interpreted as a Roman *modius* holding ears of corn, a motif that on coins represents the imperial provision of food (Tomlin 2010). This came from the fill of an earlier ditch containing third century pottery, so may not be directly related to activity associated with the oven material, but might relate to a function of the site. The *modius* is sometimes used explicitly to represent the *annona Augusta*, symbolising the emperor’s power to care for his people through the provision of grain, and could relate to the issue of official rations, but might simply signify ‘abundance’ (Tomlin 2010). The ovens at Hindlip were associated with large enclosures, thought to be where animals were brought and corralled before being taken to market (Wainwright 2010). Darling (2012, 350) has suggested that the quantities of barley recorded at Catterick might also result from bread making, perhaps associated with the oven material found there.

The distribution of the later Roman Malvernian ovens may, like the baking plates discussed above, tie in with wider patterns noted for the Central Zone. The

fourth century saw a change in rural settlement, with a particularly marked decline in rural settlements in the Severn and Avon Valleys; this is interpreted as indicating landscape reorganisation and a move to more centralised estates (Smith *et al.* 2016, 207). This period also saw a sharp decline in the number of aisled buildings, with the exception of central and western areas which then had the greatest concentration of surviving examples (Smith *et al.* 2016, 67). A move towards more centralized estates may have necessitated more centralised provisioning for the workers. Perhaps we need to ask not only who was organizing the provisioning of food indicated by these ovens, but also who was organizing the production of these new oven types by the Malvern potters. Evidence elsewhere shows that strip buildings and aisled buildings functioned both as housing for estate workers as well as workshops, granaries and barns and frequently contained ovens (Perring 2002, 53–5). It is worth noting that there does not seem to be any clear link between the Roman iron industry in Worcester and the use of these ovens; the floruit of the iron industry is earlier, in the second century. There was also no evidence for industrial use, in the form of vitrification of oven fragments or associated slag and hammerscale. The City Campus site is on the other side of this road, so near enough for the large group of oven material found there to be derived from the same or related ovens. This was beyond the assumed core of the settlement, perhaps to ensure fires did not threaten major buildings and could be brought under control more easily (Cool 2006, 51). Similarly, the prefabricated ovens found at Droitwich (Hurst and Woodiwiss 1992) may have been associated with the salt production industry, used for provisioning the workers there. There does not, on present evidence, seem to be an association between the Malvern ovens and higher status settlements. None were found at the late Roman villa at Bays Meadow, Droitwich (Barfield 2006), while an early Roman oven recorded at Childswickham villa is a distinctly different type (Hurst 2004).

An unidentified ceramic object from Kingscote in south Gloucestershire, found in a late second to third century oven fill, might also be from a portable oven (Scott 1998, 206, fig. 99, 18.44). The fragment, in a tile fabric, has finger-impressed decoration reminiscent of the ovens from Holt and the East Midlands. Of particular interest is the interpretation of the site as an estate centre, with craft and agricultural activities and a possible role in the collection of tax (Timby 1998, 290–2). Perring (2002) noted that a range of administrative and social activities taking place in Roman houses would have resulted in gatherings of people who would then need to be provided for, including rent collection and feast days. These activities are hard to identify in the archaeological record, but would have been taking place. They may well have resulted in the use of prefabricated ovens and baking plates, in the same way that portable furniture, such as braziers and chamber pots,

has been associated with service rooms in Roman houses (Perring 2002, 192).

6. Suggestions for further study

The various prefabricated ovens discussed above provide different solutions to the same challenge; the need for an oven structure that could be brought onto site and easily set up, though not necessarily a portable oven as such. The custom-made structures were produced by specialist potters. The manufacture of the Holt/Chester ovens by military potters suggests some level of official organization. Nothing is known about the structure of the Malvern pottery industry, whether the production of these ovens was an individual entrepreneurial response to a recognised need, or whether this industry was subject to some level of official control or instruction. In eastern England a different solution was found, using large jars in equally coarse fabric, with similar rough surface treatment, to form the core of the ovens. These ovens seem to have been used to feed gatherings of people ‘away from home’, whether attending the amphitheatre, baths, forum, market or temple, or brought together to labour. The study presented here will be complimented by further publication of Paul Tyers’ ongoing research into the use of *clibani* (Tyers 2016), a recent example of which was identified at Gloucester (Jane Timby pers. comm.).

This paper draws together the results of three separate studies, undertaken in the context of commercial archaeology, with the associated financial constraints and deadlines. The finds have been publicised through posters and presentations at conferences and through the SGRP Newsletter (Issue 57, Spring 2014, available online via the SGRP website), reaching an international audience. This has encouraged much wider discussion of the material and discoveries than would otherwise have been previously possible, and has ultimately resulted in the collaboration that led to this joint paper. There are undoubtedly more data to be gathered, more international parallels to be found, and more interpretations to be drawn. Since the three core assemblages were analyzed, the Roman Rural Settlement Project has been publishing its results and making collated data available. The project database holds information about ovens and associated structures, site types and finds, and records the presence of ‘ceramic plates’ and ‘ceramic discs’.

Hitherto, fragments of prefabricated ovens are likely to not have been recognised or consistently described, but a detailed review of reports would undoubtedly justify the time required, producing a clearer picture of the distribution of this material. There is also much to be gained by a multidisciplinary approach to the study of this material. Associated environmental finds, for example, can provide evidence for use, alongside the associated pottery forms. The presence or absence of vitrification,

or associated slag and hammerscale needs to be noted, to eliminate (or not) the possibility of industrial use. Most of all it is hoped that wider recognition and publication of this material will lead to more detailed research. The potential for this has been demonstrated by Lenka Tkáčová’s PhD on Near-Eastern Tannurs (Tkáčová 2013), which suggests a methodology and provides a list of criteria to be recorded. This could be adapted to document the full range of oven types (prefabricated and other) and baking plates found in Britain, the fabrics used and their sources and distribution, their chronology, any associations with particular structures, settlement or activity types, and perhaps even the ethnic origins of their users where clues survive.

Acknowledgements

Many people have contributed valuable suggestions, discussions and references to the three authors during the course of their research. We would like to thank: Richard Bradley, Alan Clapham, Joyce Compton, Hal Dalwood[†], Maggi Darling, James Dinn, Mark Driessen, Edith Evans, Jeremy Evans, Sally Grainger, Laura Griffin, Derek Hurst, Chris Lydamore, Ed McSloy, Phil Mills, Nicolas Monteix, Ryan Niemeijer, Sue Stallibrass, Andrew Tibbs, Geert Vynckier, Peter Webster, Roger White, Sonja Willems and Jeroen van Zoolingen. We also thank Steve Willis, as editor of the Journal, for his patience waiting for this report to be completed. The drawing of the Prestatyn oven (Figure 1.2) is reproduced by kind permission of Clwyd Powys Archaeological Trust.

Bibliography

Ancient source

Gummere, R. (trans) 1917. *Seneca: Epistles vol. I*, Loeb Classical Library, Harvard.

Modern sources

- Alcock, J.P. 2001. *Food in Roman Britain*, Stroud.
- Atkinson, M. and Preston S. 2015. Heybridge: A late Iron Age and Roman settlement. Excavations at Elms Farm 1993–5. Volume 2, *Internet Archaeology* 40, <https://doi.org/10.11141/ia.40.1>
- Barberan, S., Piques, G., Raux, S. and Sanchez, C. with Houix, B. 2006. Un dispositif de cuisson original en Languedoc dans l’antiquité: les fours à pain à cloche mobile en céramique. *SFÉCAG: Actes du Congrès de Pézenas*, 257–71.
- Barfield, L.H. 2006. Bays Meadow villa, Droitwich: excavations 1967–77, in D. Hurst (ed.) *Roman Droitwich: Dodderhill fort, Bays Meadow villa, and roadside settlement*, CBA Research Report 146, York, 78–242.
- Barker, P.A., White, R.H., Pretty, K.B., Bird, H. and Corbishley, M.H. 1997. *Wroxeter, Shropshire: Excavations on the site of the baths basilica, 1966–90*, London.
- Blockley, K. 1989. The coarse pottery, in K. Blockley, *Prestatyn 1984–5: An Iron Age and Romano-British industrial settlement in North Wales*, BAR British Series 210, Oxford, 156–70.

- Bryant, V. and Evans, C.J. 2004. The Roman pottery, in H. Dalwood and R. Edwards, *Excavations at Deansway, Worcester, 1988–89: Romano-British small town to late medieval city*, CBA Research Report 139, York, 235–80.
- Buteux, V. 1998. The pottery assemblage from Linacres Farm, in H. Dalwood, V. Buteux and E. Pearson, *Archaeology on the Astley to Worcester aqueduct, Transactions of the Worcestershire Archaeological Society*, Third Series, 16, 15–9.
- Clapham, A. 2010. Environmental analysis, in J. Wainwright, *Archaeological Excavations at West Mercia Police HQ, Hindlip, Worcestershire*, Historic Environment and Archaeology Service report 1755, 30–5.
- Compton, J. and Webster, P.V. 2000. The coarse pottery, in E. Evans, *The Caerleon Canabae. Excavations in the civil settlement 1984–90*, Britannia Monograph 16, London, 198–264.
- Cool, H.E.M. 2006. *Eating and Drinking in Roman Britain*, Cambridge.
- Crawford, A. 2014. Ceramic oven material, in S. Sworn, H. Dalwood, C.J. Evans and E. Pearson *Excavation at the University of Worcester City Campus, Castle Street, Worcester*, Worcestershire Archaeology Research Report 2, 97–100.
- Cubberley, A.L. 1995. Bread-baking in ancient Italy. Clibanus and *sub testu* in the Roman world: further thoughts, in J. Wilkins, D. Harvey and M. Dobson *Food in Antiquity*, Exeter, 55–68.
- Cubberley, A.L., Lloyd, J.A. and Roberts, P.C. 1988. Testa and clibani: the baking covers of classical Italy, *Papers of the British School at Rome*, 56, 98–119.
- Dalwood, H., Buteux, V.A. and Pearson, E. 1998. Archaeology on the Astley to Worcester Aqueduct, *Transactions of the Worcestershire Archaeological Society*, Third Series, 16, 1–35.
- Darling, M. 2012. Stuffed dormice or tandoori chicken in Roman Britain?, in D. Bird (ed.) *Dating and Interpreting the Past in the Western Roman Empire. Essays in honour of Brenda Dickinson*, Oxford, 346–57.
- Darlington, J. and Evans, C.J. 1992. Roman Sidbury, Worcester: excavations 1959–1989, *Transactions of the Worcestershire Archaeological Society*, Third Series, 13, 5–104.
- Ellis, S.J.R. 2004. The distribution of bars at Pompeii: archaeological, spatial and viewed analysis, *Journal of Roman Archaeology*, 17, 37–184.
- Erdkamp, P. 2005. *The Grain Market in the Roman Empire: A social, political and economic study*, Cambridge.
- Evans, C.J. 2011. Roman pottery, in S. Butler and R. Cuttler (eds) *Life and Industry in the Suburbs of Roman Worcester*, BAR British Series 533, Oxford, 32–6 (1 The Butts), 48–52 (8–12 The Butts), 83–105 (14–24 The Butts).
- Evans, C.J. forthcoming. Roman oven material: preformed ceramic ovens and plates, in R. Bradley, C.J. Evans, E. Pearson, S. Richer and S. Sworn forthcoming, *Excavation at the Site of The Hive, The Butts, Worcester*, Worcestershire Archaeology, Worcestershire County Council, Report 2173, 150–61.
- Evans, C.J., Jones, L. and Ellis, P. 2000. *Severn Valley Ware Production at Newland Hopfields. Excavation of a Romano-British kiln site at North End Farm, Great Malvern, Worcestershire in 1992 and 1994*, BAR British Series 313, Oxford.
- Evans, J. 1996. The Gas House Lane (AL23) Roman pottery, in S. Cracknell, *Roman Alcester, Vol 2. Defences and defended area*, CBA Research Report 106, 58–97.
- Evans, J. 2009. Ceramic objects, in S.C. Palmer, Neolithic, Bronze Age, Romano-British and Anglo-Saxon sites excavated on the Transco Churchover to Newbold Pacey gas pipeline in 1999, *Transactions of the Birmingham and Warwickshire Archaeological Society*, 113, 3–170.
- Evans, J. 2011. Ceramic small find, in S.C. Palmer, J. Elders and C. Jones, *Ancient Bubbenhall. Excavations at Glebe Farm Quarry and Waverley Wood Quarry, Bubbenhall, Warwickshire, 1992–2009*, Archaeology Warwickshire Report 1127, 44–5.
- Evans, J. 2012. Roman pottery, in P. Thompson and S.C. Palmer, Iron Age and Romano-British and mediaeval settlements excavated on the Transco Newbold Pacey to Honeybourne gas pipeline in 2000, *Transactions of the Birmingham and Warwickshire Archaeological Society*, 116, 1–139.
- Evans, J. Unpublished. Some fired clay discs from Warwickshire; evidence of a plebeian Roman period cooking fashion? March 2004 (unpublished manuscript, author's archive).
- Fagan, G.G. 2005. *Bathing in Public in the Roman World*, Ann Arbor.
- Ferguson, R. 1994. Pottery and ceramic small finds, in S. Cracknell and C. Mahany *Alcester Excavations 1964–66, part 2*, CBA Research Report 96, York, 150–2.
- Foss, P.W. 1994. *Kitchens and Dining Rooms at Pompeii: The spatial and social relationship of cooking and eating in the Roman household*. https://quemdixerechaos.files.wordpress.com/2012/11/kitchensdiningpompeii_foss.pdf. Accessed 17 July 2015
- Giancossa, I.G. 1994. *A Taste of Ancient Rome*, Chicago.
- Grant, A. 1983. *North Devon Pottery: The seventeenth century*, Exeter.
- Greene, K.T. 1977. Legionary pottery and the significance of Holt, in J. Dore and K.T. Greene (eds) *Roman Pottery Studies in Britain and Beyond: Papers presented to John Gillam July 1977*, BAR International Series 30, Oxford, 113–32.
- Greenwood, D.P. and Batt, C.M. 2009. *Archaeomagnetic Dating of Two Fired Features from the Excavations at The Butts, Worcester*, University of Bradford (Archive report).
- Griffin, L. 2011. The Roman pottery, in R. Jackson and D. Miller, *Wellington Quarry, Herefordshire (1986–96). Investigations of a Landscape in the Lower Lugg Valley*, Oxford, 120–30.
- Griffin, L. 2012. Ceramic objects, in D. Hurst *Excavation at George Lane, Wyre Piddle, Worcestershire; Archive Report*, Worcestershire Archaeology, Worcestershire County Council, internal report 1943, 33.
- Griffin, L. 2015. Ceramic objects, in J. Wainwright *Archaeological Excavations at West Mercia Police HQ, Hindlip, Worcestershire*, Worcestershire Archaeology Research Report 5, 26–7.
- Griffin, L. 2016. The Roman artefacts, in J. Webster and R. Jackson, *Excavation at Church Farm West, Ball Mill Quarry, Grimley, Worcestershire*, *Transactions of the Worcestershire Archaeological Society*, Third Series, 25, 71–90.

- Grimes, W.F. 1930. Holt, Denbighshire: the works-depôt of the Twentieth Legion at Castle Lyons, *Y Cymmrodor*, 41, London.
- Grocock, C. and Grainger, S. 2006. *Apicius. A Critical Edition with an Introduction and English Translation*, Devon.
- Gutiérrez Lloret, S. 1990–1. Panes, hogazas y fogones portátiles. Dos formas cerámicas destinadas a la cocciódel pan en Al-Andalus: el hornillo (Tannur) y el plato (Tabag), *Lucentum*, IX–X, 161–75.
- Heke, A. 2012. The Roman ceramic building materials, in R. Cuttler, S. Hepburn, C. Hewitson and K. Krawiec *Gorse Stacks. 2000 years of quarrying and waste disposal in Chester*, BAR British Series 563, Oxford, 71–86.
- Heke, A. 2014. Portable ovens from Chester, *Study Group for Roman Pottery Newsletter*, 57, 9–13.
- Heke, A. 2017. Structures associated with food preparation; portable ovens, in T. Wilmott and D. Garner, *The Roman Amphitheatre of Chester 1: The prehistoric and Roman archaeology*, Oxford, 343–53.
- Heke, A. and Smith, I. 2009. Amphitheatre news. The past uncovered. Chester archaeology, *Design and Conservation News*, Chester City Council, 4.
- Holbrook, N. (ed.) 2008. *Iron Age and Romano-British Agriculture in the North Gloucestershire Severn Vale*, Bristol and Gloucestershire Archaeological Society Report 6, Bristol.
- Holleran, C. 2012. Shopping with the Romans, *BBC History* 13 (13), 28–30.
- Hurst, D. 2004. Fired clay, in C. Patrick and J.D. Hurst *Archaeological Survey and Excavation along the Cotswold Spring Supply Trunk Main: archive report*, Worcestershire County Archaeological Service unpublished internal report 1140, 41–3.
- Hurst, J.D., Allan, K., Blewitt, L., Bowers, C., Hooke, D., Jones, C., Morris, C., Peberdy, H., Price, S., Stewart, C., Townshend, J. and Wilks, M. 2011. ‘Some good corne, meatly woodyd, and well pasturyd’, *Dodderhill Through the Ages*, Leominster.
- Hurst, J.D. and Woodiwiss, S. 1992. Other ceramic objects, in S. Woodiwiss (ed.) *Iron Age and Roman Salt Production and the Medieval Town of Droitwich*, CBA Research Report 81, York, 64.
- Jacobelli, L. 2003. *Gladiators at Pompeii*, Los Angeles.
- Jones, A. 2008. Roman pottery, fine and coarse ware, in D. Garner, with D. Backhouse and J. Carrott, *Excavations at Chester, 25 Bridge Street 2001. Two thousand years of urban life in microcosm*, Archaeological Service Excavation and Survey Report 14, Chester City Council, 167–86.
- Luley, B.J. 2014. Cooking, class and colonial transformations in Roman Mediterranean France, *American Journal of Archaeology*, 118 (1), 33–60.
- Mulder-Hymans, N. 2002. Archaeology, experimental archaeology and ethnoarchaeology on bread ovens in Syria, *Civilisations* [online], 49, 2002. <http://civilisations.revues.org/1470>. Accessed 14 September 2013.
- Mulder-Hymans, N. 2014. The Iron Age bread ovens in the kitchen of Khirbat al-Mudayna, Jordan, in E. van der Steen, J. Boertien, and N. Muder-Hymans (eds) *Exploring the Narrative: Jerusalem and Jordan in the Bronze and Iron Ages. Papers in honour of Margreet Steiner*. London, 159–70.
- Parker, B.J. 2011. Bread ovens, social networks and gendered space: An ethnoarchaeological study of tandir ovens in South-eastern Anatolia, *American Antiquity*, 76/4, 603–27.
- Peachey, A. 2015. The Roman pottery, in A.S. Andrew and S. Quinn *Residential Development, Land North-East of Fordham Road, Soham, Cambridgeshire*, Archaeological Solutions Ltd Research Archive Report 4816, 82–119.
- Peacock, D.P.S. 1967. Romano-British pottery production in the Malvern district of Worcestershire, *Transactions of the Worcestershire Archaeological Society*, Third Series 1 (1965–7), 15–28.
- Peacock, D.P.S. 1968. A petrological study of certain Iron Age pottery from western England, *Proceedings of the Prehistoric Society*, 34, 414–27.
- Perrin, J.R. 1999. Roman pottery from excavations at and near to the Roman small town of Durobrivae, Water Newton, Cambridgeshire, 1956–58, *Journal Roman Pottery Studies*, 8.
- Perring, D. 2002. *The Roman House in Britain*, London and New York.
- Precious, B. 2014. The oxidised wares, in M. Darling and B. Precious *A Corpus of Roman Pottery from Lincoln*, Oxford, 50–81.
- Rolfe, E.N. 1899. *Pompeii Popular and Practical: An easy book on a difficult subject*, Naples.
- Rova, E. 2014. Tannurs, tannur concentrations and centralised bread production at Tell Beydar and elsewhere: an overview, in L. Milano (ed.) *Paleonutrition and Food Practices in the Ancient Near East: Towards a multidisciplinary approach*, History of the Ancient Near East/Monographs 14, S.A.R.G.O.N Editrice e Libreria, Padova, 121–70.
- Sanders, J. 1979. The Roman pottery, in G. Lambrick and M. Robinson *Iron Age and Roman Settlements at Farmoor, Oxfordshire*, CBA Research Report 32, London, 46–54.
- Scott, I. 1998. Miscellaneous iron objects and objects of uncertain function, in J. Timby *Excavations at Kingscote and Wycomb, Gloucestershire. A Roman estate centre and small town in the Cotswolds with notes on related settlements*, Cirencester, 204–6.
- Smith, A., Allen, M., Brindle, T. and Fulford, M. 2016. *The Rural Settlement of Roman Britain*, Britannia Monograph Series, 29, London.
- Symons, M. 2004. *A History of Cooks and Cooking*, Champaign.
- Taylor, M. 1981. *Wood in Archaeology*, Princes Risborough.
- Thompson, F.H. 1976. The excavation of the Roman amphitheatre at Chester, *Archaeologia*, 105, 127–239.
- Timby, J.R. 1998. *Excavations at Kingscote and Wycomb, Gloucestershire. A Roman estate centre and small town in the Cotswolds with notes on related settlements*, Cirencester.
- Tkáčová, L. 2013. Near Eastern tannurs now and then: a close-up view of bread ovens with respect to the archaeological evidence and selected ethnographic examples from Khabur region. is.muni.cz/th/362654/ff_b/BAKALARSKA_PRACA_Lenka_Tkacova_2013.pdf. Accessed 25 June 2014.
- Tomber, R. and Dore, J. 1998. *The National Roman Fabric Reference Collection. A handbook*. London. <http://romanpotterystudy.org/nrfrc/base/index.php>
- Tomlin, R. 2010. A note on the Severn Valley ware sherd displaying graffiti, in J. Wainwright *Archaeological Excavations at West Mercia Police HQ, Hindlip*, Worcestershire Historic Environment and Archaeology Service report 1755, 24.

- Tyers, P. 2016. Des cloches de cuisson (clibani) dans les provinces septentrionales, *SFÉCAG: Actes du Congrès d'Autun*, 721–30.
- Vermeersch, D. 2013. Des structures de combustion du 1er s., interprétées comme des cuisines, dans l'agglomération de Beaumont-sur-Oise (Val-d'Oise) in S. Mauné, N. Monteix, and M. Poux *Cuisines et Boulangeries en Gaule Romaine, Gallia*, 70.1, 113–9.
- Wainwright, J. 2010. *Archaeological Excavations at West Mercia Police HQ, Hindlip, Worcestershire*, Worcestershire Historic Environment and Archaeology Service report 1755.
- Wallace, R.E. 2005. *An Introduction to Wall Inscriptions from Pompeii and Herculaneum*, Illinois.
- Waters, P.L. 1963. A Romano-British tile kiln at Upper Sandlin Farm, Leigh Sinton, Worcestershire, *Transactions of the Worcestershire Archaeological Society*, 15, 1–5.
- Webster, P.V. 1976. Severn Valley Ware: A preliminary study, *Transactions of the Bristol and Gloucestershire Archaeological Society*, 94, 18–46.
- Wickenden, N. 1992. *The Temple and Other Sites in the North-Eastern Sector of Caesaromagus*, CBA Research Report 75, York.
- Williams, D.F. and Evans, J. 1991. A fragment from a probable Roman Clibanus from Catterick, North Yorkshire, *Journal of Roman Pottery Studies*, 4, 51–3.
- Wilmot, A.R. and Rahtz, S.P.Q. 1985. An Iron Age and Roman settlement outside Kenchester, (Magnis), Herefordshire. Excavations 1977–79, *Transactions of the Woolhope Naturalists Field Club*, 45, Part 1, 36–185.
- Zienkiewicz, J.D. 1986. *The Legionary Fortress Baths at Caerleon. 1: The buildings*, Cardiff.

Curved ceramic firedogs in the western Low Lands (Flanders and the western Netherlands) in the Roman era

Jeroen van Zoolingen

Abstract

Following the recovery of ceramic fragments representing curved firedogs at the site of The Hague-Uithofslaan instances of this type of cooking aid found in Roman era contexts in north-west Europe are reviewed. Aspects of function and use are discussed alongside the potential meaning of the decorative symbols present. The paper widens to a consideration of the developments in the use of firedogs through later prehistory into the Roman era. In contrast to the iron firedogs of the Iron Age these ceramic forms are found in non-elite settings. Connections to known Gallo-Roman ceramic firedogs from the area of what is now central and southern Belgium are observed; the possibility of a connection with Germanic traditions and origins is at present unresolved. Profiling these cooking utensils will hopefully lead to the identification of further examples.

Keywords: Low Lands; Flanders; the western Netherlands; archaeology; Roman period; firedogs; cooking

1. Introduction

Firedogs are stands used to support anything, from wood to a roast, over a fire. Through time they differ in shape and dimensions, as well as in material. Most common were clay or iron, but stone was also used. At the second century Roman site of The Hague-Uithofslaan, some 20 fragments of ceramic firedogs were unearthed that stand out because of the atypical curved or bent shape (Fig. 1). These finds and other recently researched like-material reported here add to the corpus of such items, help raise awareness of these distinctive but unusual site finds, and prompt questions about the incidence/distribution, type-forms and use of these items in the Low Countries, and beyond, in the Roman era.

2. Curved firedogs: The context and description of the finds

While this paper presents and considers the evidence of curved ceramic firedogs in general, the focus on the specific material and shape was triggered by the find of over 20 of such fragments at the site of The Hague-Uithofslaan, a rural settlement in Roman times (Pavlović 2011). It concerns handmade, thick-walled, decorated ceramic objects that together weigh just over 12kg (van

Kerckhove 2011, 158–61). The objects had been discarded into a well and a pit, not far from the central farmstead of the settlement. This occurred at the end of the second century AD as the features also contained pottery dating from this period (Fig. 2), for example rough ware utensils from the Rhineland (NB89), Low Lands Ware 1 bowls and Low Lands Ware 2 amphorae, black slip-glazed ware, and some samian vessels (Drag. 18/31, Drag. 33 and Drag. 37). Other finds comprise some small metal appliquéés and a simple fibula (Almgren 15). The combination of finds might indicate deposition was perhaps carried out in a careful manner (van Kerckhove 2011, 159).

The firedog ceramics from The Hague-Uithofslaan probably consisted of two parts (Fig. 3). The very coarse ware, tempered with coarse grog or crushed fired clay, is comparable to other ceramic firedogs from northwest Europe (De Clercq 2007, 195). Traces of burning and sooting show that both parts stood in contact with, or nearby, a fire. The front and top were decorated with two concentric circles, and after baking a cross was scratched within the circle on top of one of the parts (Fig. 4). One interpretation of this would be that the cross was made to disable the symbolic or even sacred functions of the firedog. However, the combination of circle and cross may also be seen as a symbol in itself, such as that of



Figure 1. Fragments of ceramic firedogs from The Hague-Uithofslaan. Photograph courtesy of O. Odé, Amsterdam.



Figure 2. Fragments of ceramic firedogs from The Hague-Uithofslaan alongside pottery finds from the same context, UHL03o c6002. Photograph courtesy of O. Odé, Amsterdam.

a four-spoke wheel symbolizing the cycle of the four seasons. It is a well-attested sign in ancient contexts that is also known with a swastika in the middle and its origins lie within a northern tradition (Liungman 1991, 282). Furthermore considering this, the (concentric) circles could alternatively also be seen as reference to the earth and sun. Other single circles on the Uithofslaan firedogs were made on the sides.

Most of the features are common for ceramic firedogs from the second century AD. However, a distinct new detail of the Uithofslaan specimens is that both parts were slightly curved. Assuming they were semi-round, the reconstructed diameter is over half a metre. Although not often found, this typical shape is not unique. During excavations in 1957 at the site of a small Roman port at Goedereede-Oude Oostdijk (De Bruin *et al.* 2012), a comparably large fragment of a curved firedog was unearthed (Fig. 5). Accompanying finds included

fragments of at least one other part of a firedog set (van Zoolingen 2012a). All pieces show resemblance with the Uithofslaan firedogs. Three were also decorated with concentric rings; the largest piece with multiple circles. Furthermore, the front, top and bottom sides of this fragment were slightly wider than the rather thin walls. This too is seen on the Uithofslaan firedogs, but is also known from ceramic firedogs from other sites, such as that from the location of a Roman fortlet and vicus at The Hague-Ockenburgh (Waasdorp 2012).

One of the other Goedereede fragments (Fig. 5, no. V684) had a hole made into it *ante cocturam*, measuring about 2cm deep and 1.5cm wide, roughly the size of an adult finger. A comparable hole was made into one of the The Hague-Ockenburgh fragments, approximately 2.3cm deep and 2cm wide (van Zoolingen 2012b). Such holes are usually found on the inside of firedogs as attachment points for a rack, grate or gridiron. The hole in the Goedereede firedog was, however, made either in the top or bottom of the object (depending upon which way round it was actually used). Perhaps this hole was not meant for attaching a rack, but used to fix the firedog firmly to the ground, using a stake, dowel or peg.

General dimensions such as height or width are difficult to reconstruct, although one might expect the objects to have been of a reasonably handy size. Fragments with traces of burning and sooting revealed that the firedogs were used near fire or heat. The positioning and intensity of these traces indicate the specific place of the fragments within a firedog set around a fire. As the firedogs were most frequently marked by fire on the inner side, especially near the bases, they were probably placed directly around a fire shielding off sparks and heat, and also functioning to contain and retain heat. They may also have been used to tunnel heat as there was also evidence found for sooting on top of the dogs, along the inner rim. These traces might come from an object being heated on top of the curved firedog, such as a bowl or a large pot. In relation to that possibility, other indications for the curved firedogs being used to support some kind of object or product are of course the holes made into the inner side of the body. As mentioned, these finger size holes were meant as attachment points for a rack, grate or gridiron.

3. Significance and discussion

3.1 Background: A short summary of the origins and development of firedogs in Europe

The earliest ceramic firedogs were probably made in the late Neolithic or early Bronze Age (De Clercq 2007, 192), examples of which were found in the Mediterranean world in the form of small crescent or moon shaped objects. Through cultural exchange the use of firedogs gradually spread further into the rest of Europe.

The first metal firedogs appeared in the eighth and seventh centuries BC. Originating from the eastern parts

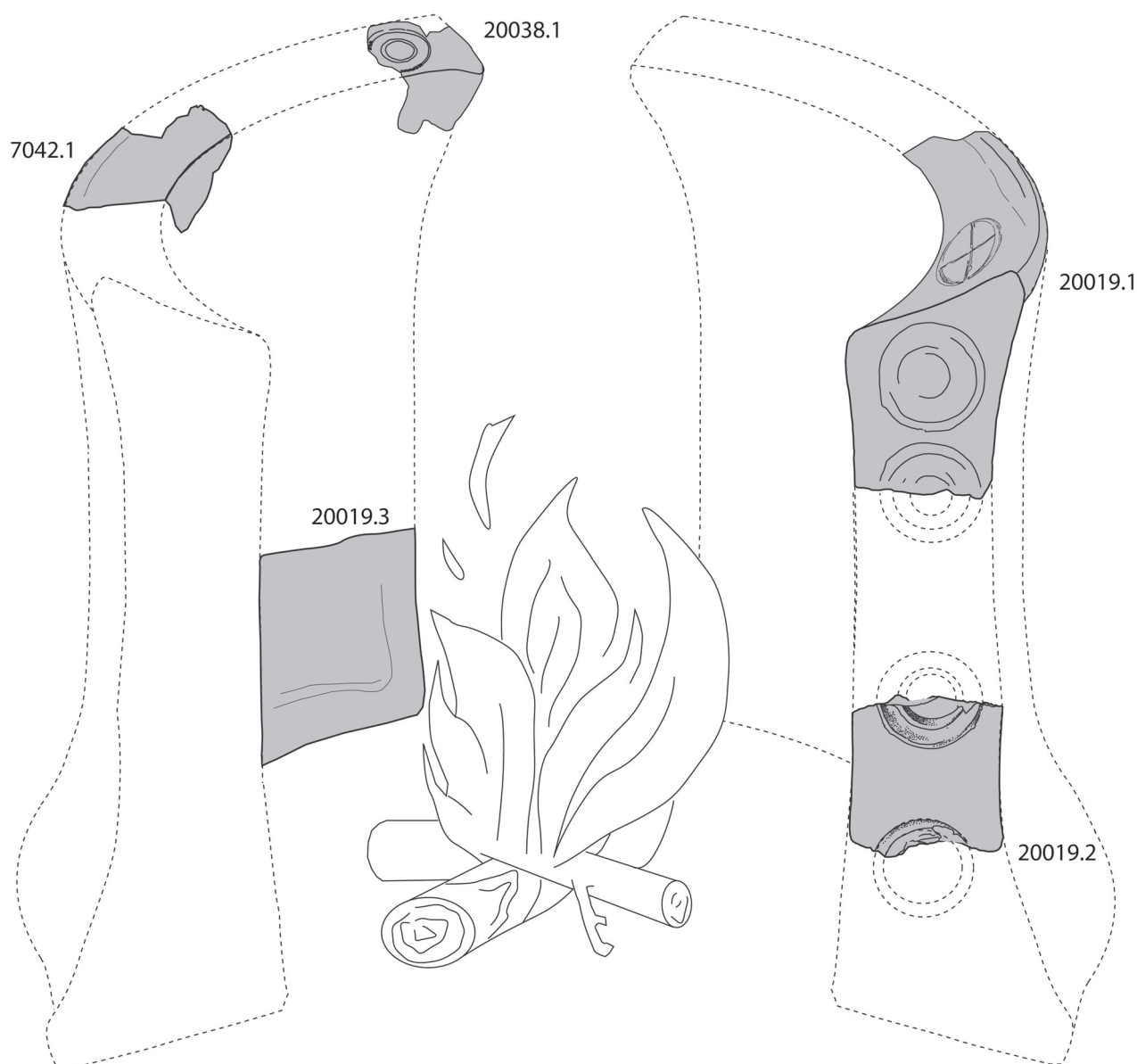


Figure 3. Reconstruction of the firedogs from The Hague-Uithofslaan. Design by M. Laan, Municipality of The Hague.

of the Mediterranean, iron firedogs, or ‘andirons’, were introduced into the Hallstatt and La Tène cultures through (according to traditional interpretation) contacts between Iron Age elites (Piggott 1971, 260). These iron firedogs are commonly found in rich graves (see for instance Feugère 2002), pointing at their role in elite burial rites (one measure of their value being the fact they will have taken much labour to fashion). Contemporary ceramic firedogs are found widely spread over the east and north of Europe, from Romania to Denmark (Babes 2003, 232–3), representing a long tradition of ceramic firedog use among Germanic tribes (Steuer 1973). Although most have been collected from settlements, some examples have also been found at burial sites.

During early Roman times iron firedogs rapidly lost their importance in Gallic society. It is difficult to attest continuity into a Gallo-Roman ceramic variant, but the fact is that many such objects have been unearthed in southern and central Belgium (De Clercq 2007). In Britain too, iron firedogs are known to have been a popular item with the Iron Age elite. Yet ceramic (or any) Roman specimens following these impressive items is strikingly lacking. Cool (2006, 52–3) therefore suggests firedogs to have been a fashion item, which disappeared with the increased availability of iron. They may, however, likewise have continued as ceramic objects, though, due to a lack of recently published data, we may simply not have identified any.

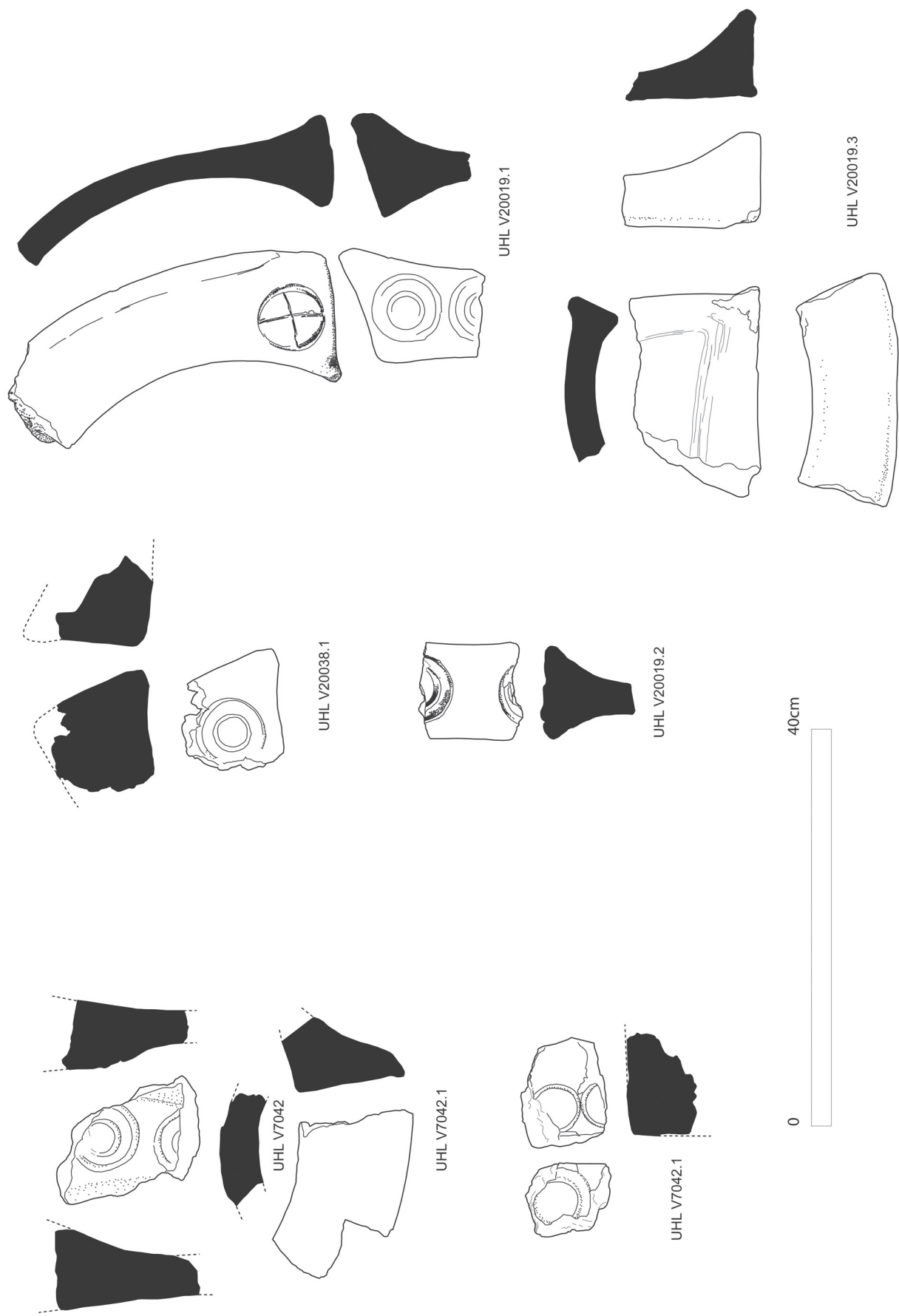


Figure 4. Ceramic firedog fragments from The Hague-Uithofslaan.

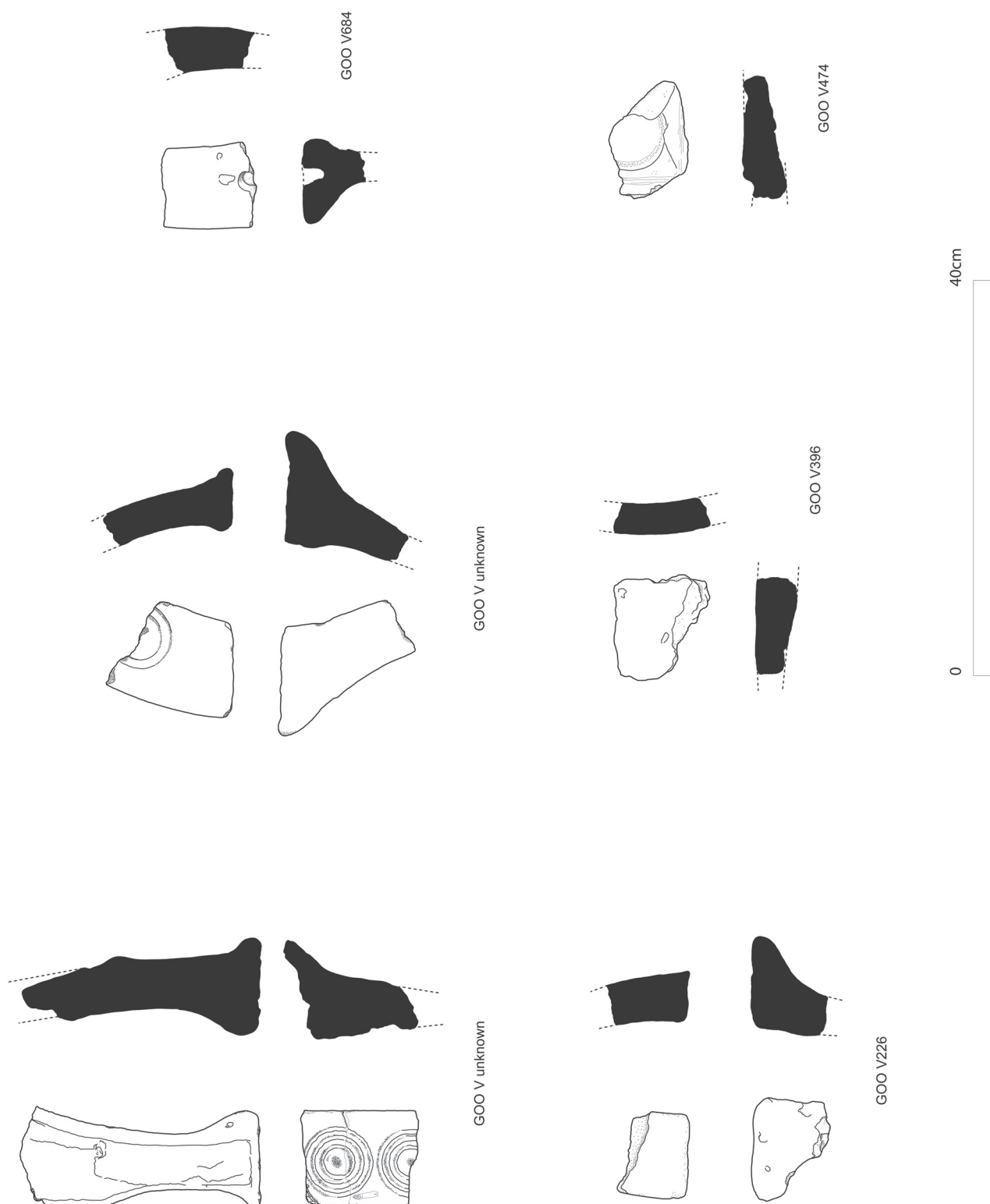


Figure 5. Ceramic firedog fragments from Goedereede-Oude Oostdijk.

An important aspect in the study of firedogs is their decoration, which is, on both ceramic and iron firedogs, quite common and strongly associated with animals. Animalistic reference is also represented by the names given to the objects, 'firedog' being an obvious example; the German word 'Feuerbock' or Dutch 'vuurbok', both meaning 'firebuck', are others. Ceramic firedogs found in the Languedoc, dating to the sixth century BC, show an early example of animalistic design resembling horses (Milan 1981). During the early La Tène period (fourth and third centuries BC) the first rams appear in the design, while second century BC ceramic firedogs from northern Europe are decorated with the heads of horses and bulls (De Clercq 2007, 193). Stylized animal characteristics such as heads, mane, or horns are common. Stripes and circles could in this sense represent stylized animal skin, in particular that of a ram (Déchelette 1914). A protruding rim and front on Gallo-Roman firedogs can thus be interpreted as a boar's mane and snout (De Clercq 2007, 196). From a late La Tène settlement near Sättelstätt in Germany comes a firedog decorated with serpent motives (Wechler 2004). Furthermore, in Germanic rituals with firedogs a strong association was made with deer (Schneeweiss 2013, 185–6).

The specific types of decoration (including the use of animal motifs) initially brought researchers to the idea of firedogs being used in fire cult practices during the

Iron Age and Roman era. Circles, finger impressions and fishbone patterns would have a strong symbolic meaning (De Clercq 2007, 191–2, with references to Déchelette 1898 and 1914). Today, our ideas about such a fire cult are adjusted; the firedog itself cannot be seen as the focus of any cult. Indeed, designs depicting strong symbols or animals speak very imaginatively in the context of the use of fire, and firedogs are often decorated with them. The object, however, remained a practical tool, even when presented to the dead as part of a burial inventory, as was often done in the Gallic world.

3.2 Gallo-Roman firedogs

The curved ceramic firedogs reported in this paper have much in common with what have been termed Gallo-Roman firedogs, found in present-day Belgium and recently listed and examined by Wim De Clercq (2007) in the context of the transformation of forms of material culture in the Roman era. These Gallo-Roman ceramic firedogs consist of two rectangular parts (Fig. 6). They vary in size with a height of at least 25cm and a length of 30–50cm (De Clercq 2007, 195). Many show traces of burning or sooting, indicating they were indeed used. Decoration is again strongly associated with animals. The fact that these finds originate from a wide range of sites, with the exception of burials, seems to point to a domestic value rather than anything mystic.

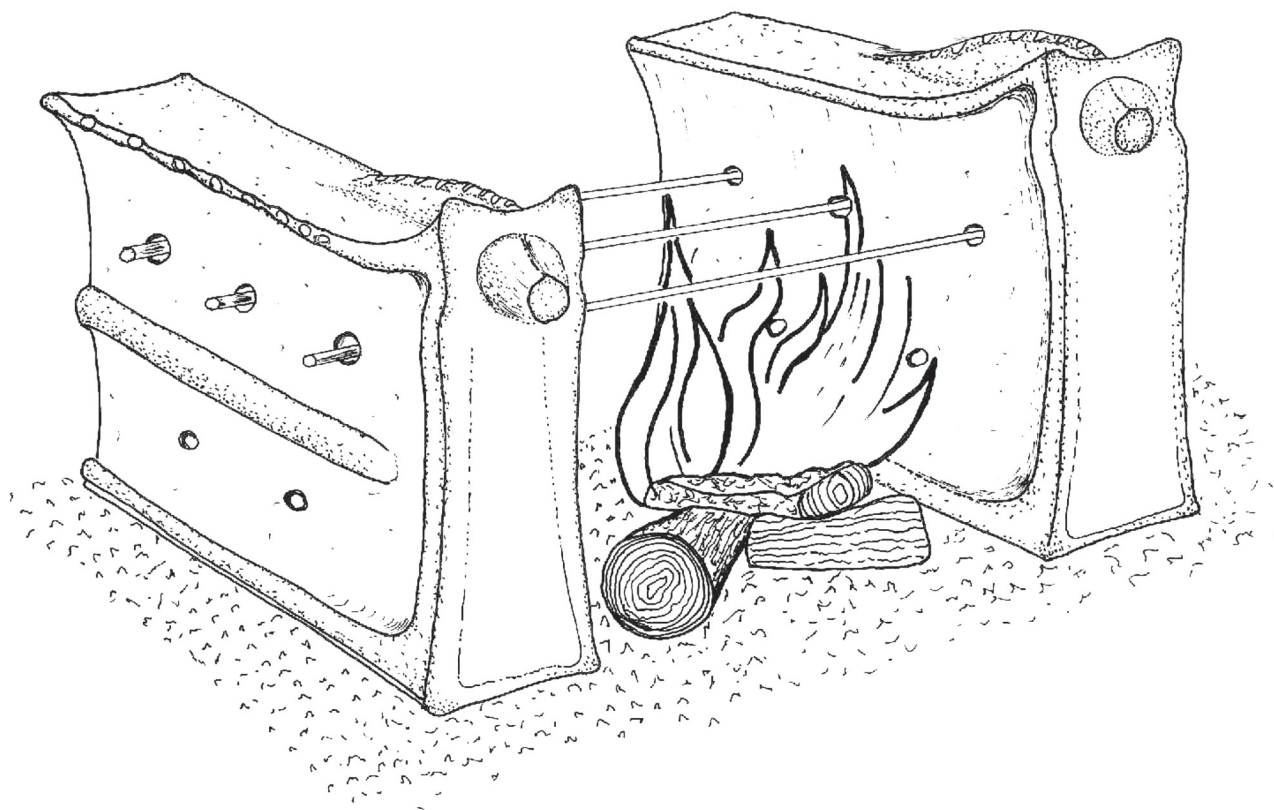


Figure 6. Reconstruction of the Aalter-Langevoorde firedog (from De Clercq 2007, fig. 3; design by J. Angenon, Ghent University).

According to De Clercq (2007, 197) no contemporary firedogs are known from northern Belgium or the southern Netherlands. However, in many respects the curved firedogs from the western Low Lands resemble specimens from Gallo-Roman Belgium. Decoration with single, double or even triple circles was often applied to examples from both regions. Also, the coarse ware fabric and tempering with grog or crushed fired clay is comparable, as is the T-shape section of relative thin walls with a wider front, top and bottom. The Gallo-Roman firedogs mostly date from the late first until the third century AD, whereas none of the curved firedogs predate the second half of the

second century AD. Can we thus conclude that the curved firedogs in fact represent the northern Gallic tradition that until now has eluded us (De Clercq 2007, 197)?

3.3. Distribution

The distribution of the curved ceramic firedogs appears to focus on the western Low Lands (Fig. 7), as examples have also been found at Vechten (NL), Aardenburg-St. Bavo (NL), Wervik-St. Maartensplein (B) and Velzeke (B). Although in all cases the finds represent rather small or few fragments, at each site the distinct curved shape could be recognised. At Wervik and Velzeke other, non-



Figure 7. The distribution of curved ceramic firedogs.

curved ceramic firedogs have also been unearthed (De Clercq 2007, fig. 2). As these belong to the 'regular' Gallo-Roman group an overlap in distribution is clear. We may not exclude the possibility that a re-examination of known Gallo-Roman firedogs might reveal even more curved examples in the south-western Low Lands.

The distribution is, however, not limited to the Low Lands. At the site of an early Roman *elbgermanischer* settlement near Zwenkau (just south of Leipzig) in Germany, some remarkable fragments of lightly fired clay have been documented (Zeischka 2004). These fragments were slightly concave and decorated with four pairs of circles. According to the excavators it cannot be excluded that more comparable finds remain undetected, determined only as pieces of 'daub' (fired clay). Both the concave, or curved shape and the decoration with concentric circles were exactly similar to the Dutch and Flemish curved firedogs. Where the Dutch and Flemish firedogs, however, date roughly to the period AD 150–250, the Zwenkau firedog was dated to the late La Tène/transitional period. Could it be that the curved ceramic firedogs found in the western Low Lands had their origins in Germany? Unless other finds are published, the Zwenkau firedog remains an anomaly in the group, both in respect to its geographic position and date.

4. Conclusion

Whilst Late Iron Age firedogs were likely to be exclusive to a small group of the social elite, their Roman successors lost any such reserved status and became more of a common utensil. Roman firedogs are found on a wide range of sites, from rural settlements to vici. Morphologically the firedogs also changed; the use of iron was gradually, and then completely, replaced by the use of clay. Many decorations – often depicting animalistic designs – continued in the prehistoric traditions, though applied in a more stylized fashion.

In the second half of the second century AD a group of distinctively curved ceramic firedogs stands out in the western Low Lands (the western Netherlands and Flanders). The origins of this group could lie with the mostly rectangular Gallo-Roman firedogs, found from the first until the third century AD in southern and central present-day Belgium. Various resemblances with these Gallo-Roman firedogs are observed, from manufacture to decoration. However, connections with Germanic traditions and origins can also be argued for. In order to clear this indistinctiveness we need to add more curved examples to the corpus of ceramic firedogs from the Late Iron Age and Roman eras.

Acknowledgements

A number of people and institutions have made important contributions to this paper. Without these, this work

would not have succeeded. Special thanks go therefore to Stichting Cultureel Erfgoed Zeeland, the Municipality of The Hague, Wim De Clercq, Wouter Dhaeze, Julie van Kerckhove, Ester van der Linden, Ab Waasdorp and Annette Zeischka-Kensler. Also the referees of this paper's draft are thanked for their useful suggestions.

Bibliography

- Babes, M. 2003. Die Poienesti-Lukaševka-Kultur, *Reallexikon der germanischen Altertumskunde*, 23, Berlin, 230–9.
- Cool, H.E.M. 2006. *Eating and Drinking in Roman Britain*, Cambridge.
- De Bruin, J., Besuijen, G.P.A., Siemons, H.A.R. and van Zoolingen, R.J. 2012. *Goedereede-Oude Oostdijk. Een havenplaats uit de Romeinse tijd*, Leiden.
- Déchelette, J. 1898. Le bélier consacré aux divinités domestiques sur les chenets gaulois, *La Revue Archéologique*, 33/2, 63–81; 243–62.
- Déchelette, J. 1914. *Manuel d'archéologie préhistorique, celtique et gallo-romaine. II. Archéologie celtique ou protohistorique. Troisième partie: Second Âge du Fer ou époque de La Tène*, 1399–428.
- De Clercq, W. 2007. Figuration et symbolique du chenet dans le monde des vivants et des morts du Nord-Ouest de la Gaule (ca. 250 av. J.-C.–275 ap. J.-C). Un aspect particulier de la culture matérielle indigène à travers la romanisation, in G. Leman-Delerville and V. Kruta (eds) *Feu des morts, foyers des vivants. Les rites et symboles du feu dans les tombes de l'âge du fer et de l'époque Romaine*, Revue du Nord 11, hors série, Lille, 191–208.
- Feugère, M. 2002. Das frühe Eisengerät, in J. Peska and J. Tejral *Das germanische Königsggrab von Musov in Mähren*, Mainz, 421–51; 558–63.
- Liungman, C.G. 1991. *Dictionary of Symbols*, New York.
- Milan, C. 1981. Les chenets zoomorphes de la Gaule pré-romaine et romaine, *Les Études Celtiques*, 18, 49–64.
- Pavlović, A. (ed.) 2011. *Archeologisch onderzoek aan de Uithofslaan. Gemeente Den Haag. Deel 1: Sporen van bewoning uit de ijzer tijd (vindplaats 6) en de Romeinse tijd (vindplaats 3)*, HAR 1122, Den Haag.
- Piggott, S. 1971. Firedogs in Iron Age Britain and beyond, in J. Boardman, M.A. Brown and T.G.E. Powell (eds) *The European Community in Later Prehistory. Studies in Honour of C.F.C. Hawkes*, London, 242–70.
- Schneeweiss, J. 2013. Hirschkult bei den Germanen? Die Deponierung von Hirschgeweih und Feuerbock aus Vietze an der Elbe, in I. Heske, H.-J. Nüsse and J. Schneeweiss (eds) *'Landschaft, Besiedlung und Siedlung' Archäologische Studien im nordeuropäischen Kontext* Göttinger Schriften zur Vor- und Frühgeschichte, 33, Neumünster and Hamburg, 177–90.
- Steuer, H. 1973. Germanische 'Feuerböcke' aus dem Hannoverschen Wendland, *Archäologisches Korrespondenzblatt*, 3, 213–7.
- Van Kerckhove, J. 2011. Aardewerk uit de Romeinse tijd (vindplaats 3), in A. Pavlović (ed.) *Archeologisch onderzoek aan de Uithofslaan. Gemeente Den Haag. Deel 1: Sporen van bewoning uit de ijzertijd (vindplaats 6) en de Romeinse tijd (vindplaats 3)*, HAR 1122, Den Haag, 140–231.

- Van Zoolingen, R.J. 2012a. Fragmenten van keramische vuurbokken, in J. de Bruin *et al.* *Goedereede-Oude Oostdijk. Een havenplaats uit de Romeinse tijd*, Leiden, 106–7.
- Van Zoolingen, R.J. 2012b. Keramische objecten, in J.A. Waasdorp (ed.), *Den Haag Ockenburgh. Een fortificatie als onderdeel van de Romeinse kustverdediging*, Haagse Oudheidkundige Publicaties 13, Den Haag, 88–9.
- Waasdorp, J.A. (ed.) 2012. *Den Haag Ockenburgh. Een fortificatie als onderdeel van de Romeinse kustverdediging*, Haagse Oudheidkundige Publicaties 13, Den Haag.
- Wechler, K.-P. 2004. Feuerbock im Haus, *Archäologie in Deutschland*, 4, Stuttgart, 61.
- Zeischka, A. 2004. Elbgermanische Feuerböcke?, *Archäologie in Deutschland*, 2, 20, Jahrgang, Stuttgart, 48.

A Late Iron Age and early Roman pottery assemblage from Leybourne Grange, West Malling, Kent

Edward Biddulph

with a contribution by Sean Patrick Quinn

Abstract

Some 3500 sherds of pottery were recovered from excavations by Oxford Archaeology at Leybourne Grange, near West Malling in Kent. The assemblage spanned the Late Iron Age to early Roman period and was indicative of a basic-level rural settlement, although small amounts of imported amphorae, Gallo-Belgic wares and samian wares also recorded suggest that the settlement was situated within wider trading networks. A notable aspect of the assemblage was the presence of pottery tempered with rock fragments identified by petrographic analysis as sandstone. The pottery, hitherto not recognised in the region, is likely to have been locally made, the sandstone having derived from the Hythe Formation, which forms part of the geology of the site. Despite the availability of the stone, sandstone-tempered pottery appears to have been a short-lived phenomenon, perhaps relating to a period of experimentation during a time of flux in ceramic traditions. This paper describes and discusses the sandstone-tempered pottery in its ceramic and regional context, and examines themes of pottery supply, deposition and settlement status.

Keywords: Kent; settlement archaeology; Late Iron Age; early Roman period; pottery; imports

1. Introduction

The site of Leybourne Grange is located to the west of Leybourne village near West Malling in Kent (NGR: TQ 678 593), and to the south of the M20 motorway within the grounds of a former hospital (Fig. 1). Excavations were undertaken in four areas (A to D) in the southern part of the site in 2009 by Oxford Archaeology in advance of residential development. A watching brief was subsequently maintained by Oxford Archaeology on other areas, though archaeological remains were confined to one area (E).

Residual worked flint, including a polished axehead, points to Neolithic activity in the area, and more worked flint and pottery tentatively dated a ditch in Area D to the Late Bronze Age. The most significant activity, however, dated from the Late Iron Age to early Roman period. In Area A, a large enclosure, which contained pits and a four-post structure, was established in the late first century BC or early first century AD. This was replaced by a second enclosure, which contained a group of inter-cutting pits. Pottery suggests that the ditches were infilled within a few decades following the Roman invasion of AD 43. A series of Late Iron Age and early Roman narrow field or boundary ditches were recorded in the southern part of Area A and Area D. Another enclosure, dated to the Late Iron Age, was recorded in Area E.

Significant amounts of pottery – mainly locally-produced, but also including imported amphorae and Gallo-Belgic wares – were recovered from both the ditches and pits. Together the excavated evidence suggests a rural settlement of relatively low status. A notable aspect of the ceramic assemblage was the presence of a coarseware type, apparently introduced in the Late Iron Age, which was tempered with rock fragments. These have been identified as sandstone. The choice of sandstone as a filler within the pottery of the region, at this time dominated by grog-tempered tradition, with ‘Romanized’ sand-tempered fabrics beginning to emerge, is unusual and may represent opportunistic use of local resources, if not a degree of experimentation.

The pottery is described below along with the rest of the pottery assemblage. A detailed site report, containing a full description of the archaeology encountered, as well as artefactual and environmental reports, is available to download from Kent Archaeological Reports online (Biddulph 2017).

2. The assemblage, methodology and fabrics

2.1 The assemblage

A total of 3591 sherds with a weight of 46,873g were recovered from the excavation. A further 221 sherds,



Figure 1. Site location maps, showing the areas where the archaeological investigations and monitoring were undertaken (by strip, map and sample excavation work and the areas covered by watching brief).

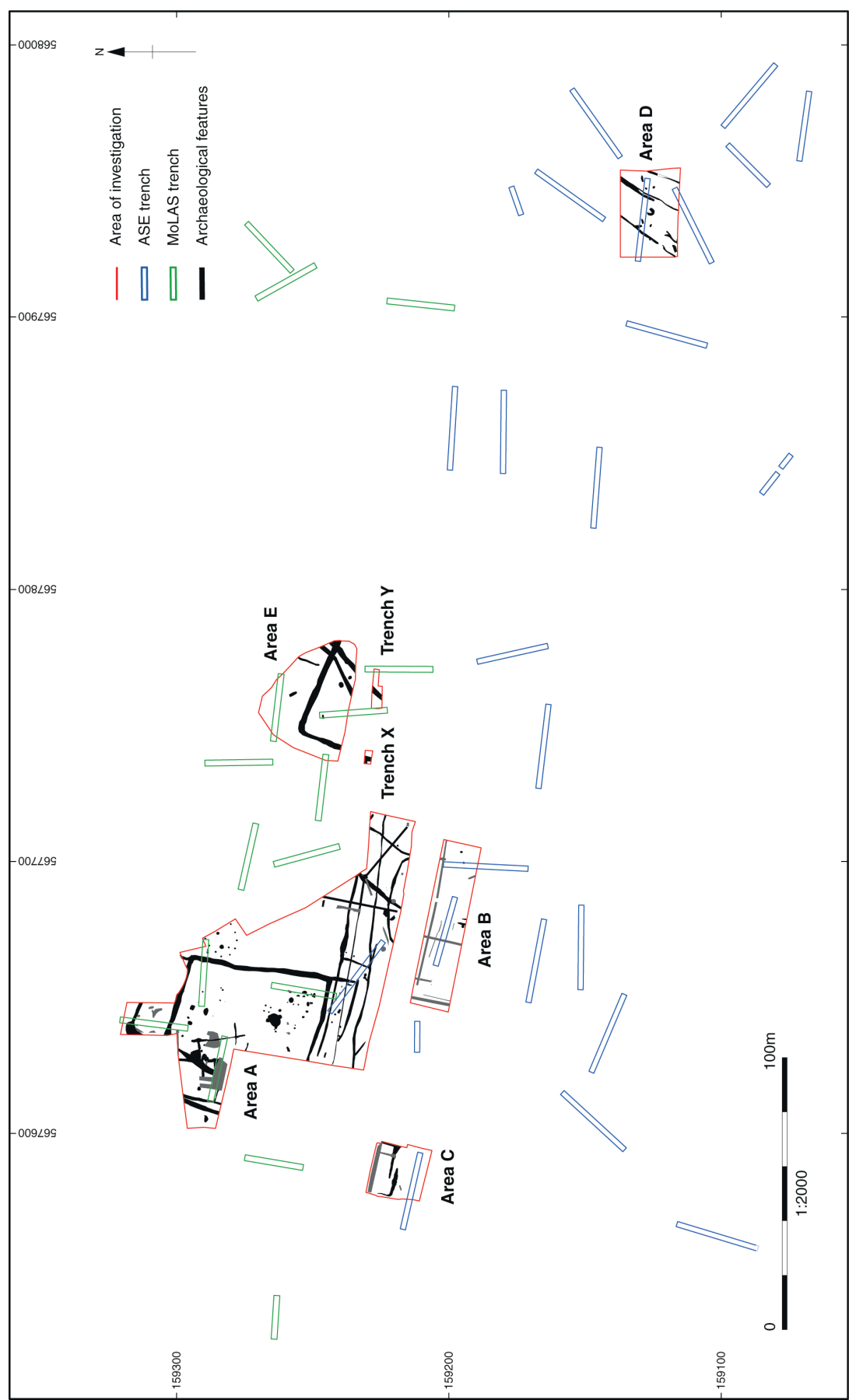


Figure 2. Areas of archaeological investigation.

weighing 3210g, were collected from a subsequent phase of watching brief. The assemblage consists almost exclusively of Late Iron Age and early Roman pottery dating up to *c* AD 50/70. A small quantity of sherds is of earlier date, probably Late Bronze Age/Early Iron Age, and a single post-medieval fragment was also noted.

The assemblage derived from 135 contexts, producing context groups which varied very considerably in size. The average size of group was 371g. The largest group (1210) weighed *c* 8900g, but including this only four context groups produced more than 2000g of pottery. Fifty-five context groups produced less than 50g of pottery each. The condition of the material was also variable. Surface condition ranged from good to poor, and some sherds were worn, although relatively few sherds were heavily abraded.

2.2 Methodology

The assemblage was sorted within context groups into fabrics and then into sherd groups, that is to say, collections of sherds sharing certain characteristics, such as rims belonging to the same vessel or pieces with particular decoration, or simply a mass of undiagnostic body sherds of identical fabric. Each sherd group was quantified by sherd count, weight, and where rims were present estimated vessel equivalents (EVE), which records the surviving percentage of a complete rim (here expressed in decimal form, hence 0.25 EVE equals 25%), and minimum number of vessels (MNV) based on rim count. Vessel types were identified only from rims, and given Oxford Archaeology form codes (Booth no date). In addition, vessels were matched with forms in regional typologies, primarily Monaghan's corpus of North Kent and Upchurch pottery (Monaghan 1987), the Camulodunum series (Hawkes and Hull 1947), and Thompson's typology of 'Belgic' forms (Thompson 1982). Where possible, fabrics were assigned codes devised by the Canterbury Archaeological Trust (CAT no date).

2.3 Fabrics

The list of fabrics represented is provided below. Detailed descriptions for a number of fabrics can be found in Tomber and Dore (1998), whose National Roman Fabric Reference Collection codes are in parentheses. Fabric quantification is given in Table 1.

Late Bronze Age/Early Iron Age fabrics

FLINT. Flint-tempered fabric
SAND. Sand-tempered fabric

Amphorae

R50. South Spanish amphora fabric (BAT AM 1–3)
R56. South Gaulish amphorae fabric (GAL AM 1–2)
R98. Unsourced amphora fabric

Shelly ware

R69. North Kent/South Essex shelly ware

Late Iron Age/Early Roman fabrics

LIAB4. Coarse flint-tempered ware
B1. Fine grog-tempered ware (SOB GT)
B2. Coarse grog-tempered ware (SOB GT)
B3. Grog-tempered ware with flint
B5. Grog-tempered ware with sand
B5.1. Grog-tempered ware with shell
B8. Fine sand-tempered ware
B9. Coarse sand-tempered ware
B9.1. Glauconitic Medway Valley ware
B9R. Sandstone-tempered ware
R154. Red-surfaced grog-tempered ware

Fine wares

B12. Terra Rubra (?GAB TR 1A)
BER12. Terra Nigra (GAB TN 1)
R151. Unsourced red colour-coated ware

Oxidised wares

R8. Fine sandy oxidised ware
R68. Patchgrove oxidised ware (PAT GT)
R71. Miscellaneous fine oxidised wares
R74. Miscellaneous sandy oxidised ware

White-slipped wares

R18. North Kent fine white-slipped oxidised ware

Reduced wares

R73. Sandy greyware

Samian wares

R42. South Gaulish samian ware (LGF SA)

White wares

B17. North Gaulish sandy white ware (NOG WH 3)
BER5-10. Unsourced Gaulish white wares
BER15. Organic (?chaff) tempered ware
R75. Miscellaneous white wares

Post-medieval wares

PM. Miscellaneous post-medieval ware

3. Assemblage composition and pottery supply

3.1 Phasing

Context group dates and stratigraphic phasing allowed the assemblage to be divided into two phases: Late Iron Age (*c* 50 BC–AD 43/50) and early Roman (*c* AD 40–70). There was in fact little to separate the phased assemblages from a ceramic perspective; both were dominated by grog-tempered wares and other pottery supplied during the Late Iron Age and the earliest years of the Roman period. Ceramic groups of early Roman date were so dated

Table 1. Late Iron Age and Roman pottery (MNV: minimum number of vessels; EVE: estimated vessel equivalents)

Ware	Sherds	%	Weight (g)	%	MNV	%	EVE	%
B1	1083	28%	9342	19%	88	31%	9.53	32%
B12	5	<1%	64	<1%				
B17	2	<1%	22	<1%				
B2	527	14%	12398	25%	32	11%	3.13	10%
B3	1	<1%	92	<1%	1	<1%	0.18	1%
B5	47	1%	425	1%	4	1%	0.21	1%
B5.1	67	2%	1150	2%	13	5%	1.10	4%
B8	21	1%	165	<1%	2	1%	0.35	1%
B9	114	3%	1407	3%	8	3%	0.71	2%
B9.1	501	13%	5856	12%	25	9%	3.96	13%
B9R	649	17%	9547	19%	44	16%	4.11	14%
BER12	1	<1%	8	<1%	1	<1%	0.05	<1%
BER15	21	1%	35	<1%				
BER5-10	5	<1%	19	<1%				
FLINT	4	<1%	32	<1%				
LIAB4	250	7%	3316	7%	28	10%	2.50	8%
PM	1	<1%	3	<1%				
R151	1	<1%	3	<1%				
R154	54	1%	371	1%	8	3%	0.99	3%
R18	2	<1%	5	<1%	2	1%	0.32	1%
R42	1	<1%	5	<1%	1	<1%	0.05	<1%
R50	2	<1%	90	<1%				
R56	3	<1%	165	<1%				
R68	12	<1%	211	<1%	1	<1%	0.03	<1%
R69	377	10%	5121	10%	19	7%	2.47	8%
R71	2	<1%	2	<1%				
R73	10	<1%	25	<1%	1	<1%	0.08	<1%
R74	2	<1%	32	<1%	1	<1%	0.09	<1%
R75	7	<1%	18	<1%				
R8	28	1%	53	<1%				
R98	3	<1%	49	<1%				
SAND	9	<1%	52	<1%				
Totals	3812		50083		279		29.86	

on account of the usually small amounts of pottery that were attributed with certainty to the Roman period. If the latter were removed, then the groups would be identical in composition to those assigned exclusively to the Late Iron Age. Similarly, most Late Iron Age groups could conceivably date beyond AD 43, since the principal wares continued to be made after this date. However, it is notable that early Roman context-groups generally belonged to features that were situated higher in the stratigraphic sequence and therefore were later than features containing pottery dated to the Late Iron Age. This suggests that the ceramic phases are reasonably valid when compared with the stratigraphic phasing.

3.2 The Late Iron Age pottery

Pottery from groups dated to the Late Iron Age and recovered from features assigned on the basis of stratification to the same period accounted for 61% of the entire assemblage by EVE (Table 2). Fine grog-tempered ware (B1) formed the largest share of the Late Iron Age group, constituting 27% by EVE (Table 2). The fabric was available mainly in bead-rimmed jars (CH) and jars

Table 2. Pottery from Late Iron Age context groups (quantification by EVE). * = fabrics present, but with no rim surviving

Ware	C Jar	E Beaker	H Bowl	J Platter	L Lid	Total EVE	% EVE
B1	3.77		1.06			4.83	27%
B12						*	
B17						*	
B2	1.9		0.45		0.03	2.38	13%
B3			0.18			0.18	1%
B5	0.14					0.14	1%
B5.1	0.87					0.87	5%
B8	0.29			0.06		0.35	2%
B9	0.17					0.17	1%
B9.1	3.2	0.27	0.07			3.54	18%
B9R	1.91				0.08	1.99	11%
BER12				0.05		0.05	<1%
BER15						*	
LIAB4	1.13					1.13	6%
R154			0.60			0.60	3%
R69	1.99					1.99	11%
R75						*	
R98						*	
Total EVE	15.37	0.27	2.36	0.11	0.11	18.22	
% EVE	84%	1%	13%	1%	1%		

or bowls with everted rims and cordoned or corrugated shoulders (CD/HD), for example Monaghan (1987) type 4F, or Hawkes and Hull (1947) Cam 229. Other forms were present, however, including high-shouldered necked jars (CE), barrel-shaped jars (CB) and narrow-necked jars or flasks (CC). The fabric was variable and ranged from very fine to lumpy and relatively coarse. The division between fabric B1 and its coarse counterpart, B2, was not always clear, with both wares essentially forming a continuum of a single fabric. There was consequently some overlap of forms, with the everted rimmed, corrugated bowl or jar (CD/HD) and bead-rimmed (or the related globular) jar (CG/CH) appearing in the coarse fabric. However, storage jars (CN), for example Monaghan (1987) type 3D and Thompson (1982) type B1–2, were found only in the coarse fabric. Some grog-tempered fabrics contained additional tempering agents. A bowl with an everted rim and corrugated shoulder (HD) was present in grog and flint-tempered ware (B3), and a similar form (CD) was also available in grog and sand-tempered ware (B5). A globular jar (CG) and a butt beaker (EA) were also recorded in this fabric. Grog and shell-tempered ware (B5.1) was present in the form of bead-rimmed jars (CH), lid-seated jars (CJ) and so-called saucepan jars (CU), the last characterized by thick, bulging walls, an internally thickened rim, and the absence of a neck (Hawkes and Hull 1947, Cam 254). Lid-seated jars were manufactured in the north Kent marshes (Monaghan 1987, type 3L), but were ubiquitous at production sites along the Essex coast, notably at Mucking and West Tilbury (Jones and Rodwell 1973, 22; Drury and Rodwell 1973, 82; Jefferies and Lucy 2016, 162, type AB), and it is possible that the vessels originated there. Red-surfaced grog-tempered ware was a much finer fabric. Forms were restricted to fine dining vessels, including a necked bowl (HD), and a carinated bowl (HA) with cordons and lattice decoration, which may have been inspired by Gallo-Belgic forms, such as the girth beaker Cam 84.

Glaucanitic Medway Valley ware (B9.1) was another important category, comprising 18% by EVE of the Late Iron Age assemblage. Its black-grained and rounded glauconite or greensand inclusions give the ware a distinctive appearance, and even when it contained additional inclusions, notably grog and quartz sand, the ware was easily separated from other fabrics. Rustication in the form of strips or nodules was noted on three fragments. Glaucanitic fabrics were well-established in the region, being attested at sites dating to the earlier Iron Age. Glaucanitic fabrics accounted for 90% of the Early-Middle Iron Age assemblage from Eythorne Street, Hollingbourne, some 15km south-east of Leybourne (Jones 2006). The glauconite was available locally, and so the pottery may have been produced near the site. The use of grog with glauconite indicates that grog-tempering traditions were active where glaucanitic pottery was made,

and so potentially grog-tempered fabrics B1, B2 and others were of local origin (indeed, an over-fired and warped sherd in fabric B5 from pit 1298 is a potential waster from a local manufacturing site). There was a relatively wide range of forms in fabric B9.1. Footrings or low pedestal bases were noted in a number of contexts. Just one footring was found with a rim, which was identified as a carinated bowl (HA), but others are likely to have been part of oval- or globular-bodied jars with everted rims (Couldrey 1984, type 4; Drury 1978, type 13, fig. 38). Wide-mouthed jars with everted rims (CM) resembled these types, and some of the footrings or pedestals are likely to have belonged to them. Such forms have a long chronology; they were, for example, recorded at Eythorne Street (Jones 2006). Barrel-shaped (CB), globular (CG), and bead-rimmed (CH) jars, as well as storage jars and jars with corrugated shoulders and everted rims (CD), were also represented in the ware. One globular jar had a flaring rim and scored or roughened-surface decoration on its shoulder and body. Vessels other than jars were represented by a sole butt beaker (EA).

A range of fabrics subsumed under the category of sandstone-tempered ware (B9R) account for an 11% share of the Late Iron Age assemblage. The pottery is handmade, and generally displays dark exterior surfaces and orange-brown interior surfaces. Fabrics are variable, but are generally gritty, containing moderate to abundant quartz sand, moderate amounts of distinctive white or off-white rock fragments, and occasional chert, glauconite and argillaceous inclusions. On recording, the rock fragments were provisionally identified as ragstone or Kentish Rag, which derives from the Hythe Formation, the northern extent of which lies a short way to the south of the site (the site itself being situated on the Folkestone Formation). However, thin-section analysis by Dr Patrick Quinn at University College London identified the fragments as ‘a silicified, cherty, quartz-rich, fine to medium-grained sandstone’ (see below). As the Hythe Formation also consists of non-calcareous sandstone, these inclusions are also likely to have been sourced locally. Forms were largely restricted to bead-rimmed jars (CH), often with facets below the rim (Monaghan 1987, type 3G), and globular jars (CH), with a lid (L) also recorded.

Flint-tempered pottery (LIAB4) accounted for 6% of the Late Iron Age assemblage. The ware comprises a number of fabric variants, but all are united by the presence of white or grey sub-angular to angular flint (and chert) fragments. In addition, the ware contained quartz sand and grog in varying proportions. The ware was available as globular jars (CG), bead-rimmed jars (CH), and jars with everted rims (CI).

Fine and coarse sandy fabrics were present in small quantities. A carinated jar (CF) with an everted rim and a cordon at the base of the neck and a platter were recorded

in the fine fabric (B8), while a bead-rimmed jar was available in coarser fabric, B9.

North Kent or South Essex shelly ware (R69), which was separated from fabric B5.1 on the basis of its corky appearance and dominance of shell in the fabric, was reasonably well-represented in the Late Iron Age assemblage at 11% by EVE, although its relatively low quantity compared with contemporaneous assemblages further north, for example south-east of Dartford, where fabric R69 accounted for 17% (Biddulph 2011, table 5.6), reflects the fact that the source of the pottery was not local. Forms included jars also encountered in fabric B5.1: saucepan-jars (CU), bead-rimmed jars (CH), and lid-seated jars (CJ). Other forms included storage jars (CN) with characteristic herringbone decoration on the shoulder. These are almost certainly a north Kent product (Monaghan 1987, type 3D).

A small quantity of pottery arrived from Gallia Belgica. A decorated fragment from a bowl or perhaps a beaker was recorded in a fine sandy fabric, with frequent black (?sand) and rarer white and mica inclusions (B12). It was unslipped externally, but had a red brown slip on the interior surface. The fabric recalls Pompeian Red ware, but this identification is unlikely on the grounds of form (Pompeian Red ware was available exclusively as dishes and lids). A second sherd had a similar fabric, but was lighter in colour – buff brown, rather than red brown – and had an external red brown slip. Again, the

sherds were decorated and probably from a beaker. Ruling out an Italian source, Gallia Belgica seems the most likely origin for both, and the sherds are tentatively identified as Terra Rubra (Tomber and Dore 1998, 17). A platter (Hawkes and Hull 1947, Cam 5) in Terra Nigra (BER12) was a certain product from Gallia Belgica. Additionally, two sherds of a fine sandy white ware (B17) belonged to vessels made in north Gaul. Sherds from an Italian or Gaulish amphora (R98) with a pink, calcareous and micaceous fabric, complete the range of imported wares, although an unsourced whiteware (R75) may be from Gaul. Other fragments of white ware were recorded as an organic-tempered fabric. This was a fine soft, pink white grass or chaff-tempered fabric with uneven surfaces. Its origin is more likely to be local than imported, but in the absence of rims to identify form, little more can be said. It is possible, given its description, that the fragments derive from a briquetage-like vessel.

3.3 The early Roman pottery

Context groups assigned to the early Roman period on the basis of ceramic and stratigraphic dating accounted for 32% of the entire assemblage by EVE (Table 3). Like those of the Late Iron Age the groups were dominated by grog-tempered wares. The fine fabric (B1) increased its share to 38% of the phased assemblage by EVE (Table 3). A more diverse repertoire of forms was recorded. High-shouldered necked jars (CE) were best

Table 3. Pottery from early Roman context groups (quantification by EVE). * = fabrics present, but with no rim surviving

Ware	B Flagon	C Jar	E Beaker	F Cup	H Bowl	J Platter	L Lid	M Misc.	Total EVE	% EVE
B1		2.97	0.06		0.59				3.62	38%
B12									*	
B17									*	
B2		0.65							0.65	7%
B5			0.03		0.04				0.07	1%
B5.1		0.23							0.23	2%
B8									*	
B9		0.45					0.09		0.54	6%
B9.1		0.24			0.15				0.39	4%
B9R		1.48						0.04	1.52	16%
BER15									*	
BER5-10									*	
LIAB4		0.94			0.09		0.04		1.07	11%
R151									*	
R154		0.12	0.08	0.19					0.39	4%
R18	0.25		0.07						0.32	3%
R42						0.05			0.05	1%
R50									*	
R56									*	
R68		0.03							0.03	<1%
R69		0.48							0.48	5%
R73		0.08							0.08	1%
R74		0.09							0.09	1%
R75									*	
R8									*	
R98									*	
Total EVE	0.25	7.76	0.24	0.19	0.87	0.05	0.13	0.04	9.53	
% EVE	3%	81%	3%	2%	9%	1%	1%	<1%		

represented (22% of forms by EVE in fabric B1). Other jars included narrow-necked (CC), globular (CG), bead-rimmed (CH) and lid-seated (CJ) types, and jars with everted rims and corrugated shoulders (CD). A necked bowl (HD, essentially a wider-mouthed variant of CD), a globular bowl (HG), and a beaker (E) were also recorded. The coarse fabric was available mainly in the form of storage jars (CN; Monaghan 1987, type 3D). Other forms comprised bead-rimmed jars (CH) and a corrugated jar (CD). A globular beaker (ED) and bowl (HG) were recorded in grog and sand-tempered ware (B5). Grog and shell-tempered ware (B5.1) was available as bead-rimmed jars and storage jars likely to have originated in north Kent or south Essex. The fine red-surfaced grog-tempered ware (R154) was supplied mainly as dining forms, including a butt beaker (EA), globular beaker (ED) and a cup (FB) that copied the bell-shaped Terra Rubra form Cam 56. In addition, a bead-rimmed jar was recorded.

Sandstone-tempered ware (B9R) continued to make a significant contribution to the assemblage, constituting 16% by EVE. The bead-rimmed jar (CH) with faceting below the rim (Monaghan 1987, type 3G) remained the fabric's principal form, but there was also a degree of functional specialization. A near-complete strainer or colander (MG) and a base fragment of a second example, both with multiple holes made in the base before firing by the potter, were recorded. Flint-tempered ware (LIAB4) was better represented in this phase than it was in the Late Iron Age assemblage, accounting for 11% by EVE. A lid (L), globular bowl (HG) and bead-rimmed jars (CH) were recorded in the ware.

Other wares belonging to this ceramic phase made relatively minor contributions to the assemblage. Notably, the amount of glauconitic Medway Valley ware (B9.1) had declined significantly to 4% by EVE, providing evidence that the use of glauconite had virtually ceased after the Roman conquest. Some of the forms present in this phase were identical to those represented in the Late Iron Age: globular (CG) and bead-rimmed (CH) jars, and a carinated bowl (HA), but the dramatic drop in quantity suggests that production had all but ceased. Unlike fabric B9R, the glauconitic fabric barely survived into the Roman period. The quantity of North Kent/South Essex shelly (R69) ware had also declined. A barrel-shaped jar (CB), bead-rimmed jar, and a saucepan-type jar (CU) were recorded. Contrastingly, the proportions of sand-tempered fabrics B8 and B9 had little altered since the Late Iron Age. A bead-rimmed jar was seen in fabric B9.

What especially distinguishes the early Roman assemblage from the Late Iron Age group is the presence, albeit minor, of a range of Roman-period wares. One or more of these wares were recorded in every context group dated to this phase. Potters in the north Kent marshes supplied a butt beaker (EA; Monaghan 1987, type 2B) and ring-necked flagon (BA; Monaghan 1987, type 1E1/2) in a white-slipped oxidised ware (R18), probably after

AD 50. (The identification of the flagon fabric is a little doubtful, as voids seen on the surface are not typical of the Upchurch fabric). A jar rim occurs in Patchgrove grog-tempered ware (R68). The extent of pre-conquest production is unknown, but the ware, manufactured in west Kent, only achieved wide distribution after AD 43 (Pollard 1987, 39). The small amount of sandy greyware that was present, mainly comprised body sherds. The sole identified vessel, an oval-bodied hook-rimmed necked jar (CD), was problematic in terms of date, since the form is more typical of the second century onwards (Monaghan 1987, type 3H). However, it was associated with grog-tempered ware and other first century pottery, and so a later first century date may still be appropriate. A bead-rimmed jar (CH) was recorded in the oxidised equivalent of sandy greyware (R74). Fine oxidised (R8) and white wares (R75) were present, but no forms recognised.

Samian ware made a small contribution to the assemblage. A rim sherd from a South Gaulish Drag. 18 platter was recorded. Amphorae fabrics became more diverse. The pink, calcareous and micaceous fabric (R98) present in the Late Iron Age group was also noted in the Roman assemblage. This was joined by a South Gaulish fabric (R56), probably belonging to a Gauloise wine amphora, and a South Spanish fabric (R50) from a Dressel 20 olive oil container. North Gaulish and other Gaulish white wares (B17 and BER5–10) were present, as were fragments of the putative Terra Rubra fabric (B12) seen in the Late Iron Age assemblage. It is possible that some of these fabrics (R98 and B12 particularly) were part of the same vessels recorded in the earlier phase, and that their occurrence was residual. Fabric R151, a fine sandy fabric with a grey core and interior surface, frequent small voids and occasional clay pellets or grog, and a micaceous orange surface with a red-brown slip, is of unknown source.

4. Vessel use

Evidence of vessel use was recorded in the form of burning, wear and trimmed or perforated sherds. A burnt deposit on the external surface of a shell-tempered ware bead-rimmed jar from ditch 1107 suggests that the vessel had been placed on a hearth and used for cooking. Another shell-tempered ware jar, in this case a saucepan jar type, has carbonized deposits on the exterior surface below the rim. The vessel had presumably been used for cooking, but this may have been a secondary purpose. The exterior surface of body sherds belonging to the same vessel had a greyish white coating, and given the Thameside source of the pottery may be a salt-related deposit, with the vessel perhaps having reached the site as a salt container. Another jar, made in a glauconite and grog fabric, was severely burnt, becoming light and porous. The storage jar was found within a charcoal rich deposit in pit 1139, and no doubt had been subject to the high heat of a hearth or oven.

A further jar, a cordoned vessel in a coarse grog-tempered ware from pit 1298, was similarly burnt, though in this case the jar had warped and discoloured.

Three vessels showed evidence of re-use. A base from a fine grog-tempered pedestal jar or bowl from ditch 3007 had been trimmed around the broken edge that formerly joined the wall of the jar, and was also perforated. The piece is likely to have been reused as a spindle-whorl. A jar in coarse grog-tempered ware from pit 1299 was perforated through its base after firing. A vessel in fabric B9R from ditch 1385 had holes made before and after firing. This was a bead-rimmed jar, but had multiple perforations in the base, which had been made before firing. Clearly the vessel was intended as a colander or strainer. During its use, however, a larger perforation was punched through the centre of the base.

5. Patterning in pottery deposition

Pottery was deposited almost exclusively into pits and ditches, with much smaller quantities entering other features, these being postholes, tree-throws and layers (Table 4). In overall quantities, ditches contained more pottery than pits. In part, this is likely to be due to the relatively small number of pits compared with the potential availability of space in ditches for deposition/accumulation; ditches had a greater chance of receiving pottery. However, individual ditch fills also contained more pottery than did pit deposits. Each ditch fill contained on average 36.6 sherds and 0.5 EVEs, compared with 20.7 sherds and 0.33 EVEs for each pit fill. There was, then, a general preference for depositing pottery into ditches. There was, though, no significant difference between the pit and ditch assemblages in terms of composition. Both were dominated by jars: 84% by EVE in ditches, 77% in pits. Both contained similar quantities of beakers and bowls. Cups and platters were present only in ditches, but as there were so few of these types, the difference is unlikely to be meaningful. The mean sherd weight statistic (weight divided by count) gives an indication of sherd size and preservation. Excluding the anomalous high mean sherd weight of pottery from tree-throws, which derives from a single large and heavy storage jar sherd within a very small assemblage, sherds recovered from pits were generally larger than those from ditches. This suggests that pottery present in pit groups had been subject to fewer episodes of breakage through such means as trampling,

disturbance and relocation before final deposition, or that the groups had been sealed once deposited, thereby curtailing much further fragmentation or weathering. Pits and ditches also received most pottery along the West Malling-Leybourne bypass (A228; see Fig. 1). There, however, the sherd size was reversed, with pit groups having a mean sherd weight of 10.5g and ditches 14.8g (Jones 2009, table 1.5). In any case, all these weights are high compared with Queen Elizabeth Square, Maidstone, whose assemblage, recovered from field ditches away from settlement, had an overall mean sherd weight of 9.6g (Biddulph 2004), and the small assemblage from White Horse Stone, Aylesford, which had an average sherd weight of 5.8g and was recovered from trackway ditches (Stansbie 2006). The higher sherd weight from Leybourne Grange (and the bypass site) suggests that the features from which the pottery was collected were located relatively close to the focus of domestic occupation and areas where freshly broken pottery was originally discarded.

6. Site status and function

The arrival of Gaulish and possibly Italian imports during the Late Iron Age and conquest period indicates that the settlement was situated within wider trade networks. The pottery included a putative Terra Rubra beaker, a Terra Nigra dish, white ware flagons and wine and olive oil amphorae. After *c* AD 50, the settlement saw the arrival of a samian platter from southern Gaul. Imitations of Gallo-Belgic prototypes were also available, including a grog-tempered cup that copied a Terra Rubra form, a platter in a fine sandy fabric, butt beakers in fine grog-tempered ware and other fabrics, and a finely-made carinated bowl that probably imitated a Gallo-Belgic girth beaker. While such pottery suggests that the inhabitants were familiar with Roman (or, rather, Gallo-Roman) dining and cooking traditions, its presence alone is a poor indicator of the extent to which continental traditions were practised and whether the occurrence of these types was representative of site status and function. A clearer picture emerges, however, with the use of other indicators. Evans (2001, 28) observed that assemblages from basic rural sites of Iron Age and Roman date tended to be dominated by jars, whereas the assemblages from higher-status sites are more diverse, in particular having increased proportions of drinking and dining forms. The emphasis on jars at Iron Age sites is evident from Early to Middle Iron Age assemblages at Eyhorne Street (Jones 2006) and White Horse Stone, Aylesford (Morris 2006).

On this basis, we can see from a comparison with a number of sites in central and north-west Kent that the proportion of jars at Leybourne Grange is relatively high, certainly when compared with Queen Elizabeth Square, Maidstone (although the high-status element of that site is boosted by the survival of a single complete

Table 4. Incidence of pottery deposition amongst principal feature types (MSW = mean sherd weight (weight/count))

Feature type	Count	Weight (g)	MSW
Tree throw	8	372	46.5
Pit	764	12791	16.7
Ditch	2762	35071	12.7
Posthole	80	474	6
Layer	4	10	2.5

Table 5. Percentages of forms in Late Iron Age and early Roman assemblages (quantification by EVE, except West Malling-Leybourne bypass and Springhead by vessel count)

Site	B Flagons	C Jars	E Beakers	F Cups	H Bowls	J Platters	L Lids	Other	Total
Leybourne Grange	1	85	2	1	11	0.5	1	0	29.86
West Malling-Leybourne bypass		97			2	0.5	0.5		123
Thurnham villa (Late Iron Age)	3	90	2	1	1			3	6.28
Snarkhurst Wood, Hollingbourne		85	1		5	1		8	9.53
A2/A282, Dartford		82	16		1				8.81
Springhead (Late Iron Age)		72	10	1	10	7	1		157
White Horse Stone, Aylesford		68			31				0.54
Treatment Pond, Dartford	14	67	4	8		5			2.15
Queen Elizabeth Square, Maidstone	15	56	7	2	6	10	3		6.88
Springhead (early Roman)	3	49	11	1	16	12	7	1	4920

Data: Jones 2009, table 1.7 (West Malling-Leybourne bypass); Lyne 2006a, table 3 (Thurnham); Lyne 2006b, table 2 (Snarkhurst Wood); Biddulph 2011, tables 5.6–7 (A2/A282); Seager Smith *et al.* 2011, table 15 (Springhead); Stansbie 2006, table 4 (White Horse Stone); Biddulph 2011, table 5.8 (Treatment Pond); Biddulph 2004, table 3 (Queen Elizabeth Square).

flagon rim), but is notably lower than the nearby bypass site (Table 5). Of interest, too, is the diversity of the form range at Leybourne Grange, which, incorporating a number of dining forms, is comparable to Queen Elizabeth Square, the Treatment Pond (Dartford), and Springhead. In contrast, the form range from the bypass site and other sites, including Snarkhurst Wood (Hollingbourne) and Thurnham, is more restricted.

Taken together, Leybourne Grange is best placed in a lower-status category, its assemblage being consistent with a rural settlement. While its inhabitants had access to a range of tablewares and imported pottery typically recorded at higher-status sites, the quantities suggest that this pottery did not form part of the inhabitants' everyday cooking and dining practices. There are differences in composition between the assemblage and that from the bypass site, but these do not appear too significant when compared with, say, Springhead, a Late Iron Age shrine complex and Roman town. The supply of imported wares to Leybourne Grange made little impact on the overall balance of the site's assemblage. Its diversity in vessel types suggests that, compared with the bypass site, pottery was being used for a wider range of functions or that specialist forms were available to serve functions that would otherwise have been performed by jars and bowls. However, such forms were present in small quantity, with quantities not matching Springhead. It is worth noting that the pottery from the Quarry Wood Camp, Loose, a site often suggested to be an oppidum or an element of an oppidum, that might be expected to be clearly differentiated from low-status rural sites in terms of its ceramics, did not appear to include a greater range of imported wares compared with Leybourne Grange (Kelly 1971, 79–84). The comparison is inexact, since no quantification has been offered for the oppidum, but it raises the possibility that differences between sites of various status in the Medway Valley during the Late Iron Age were much flatter compared with the Roman period. Of incidental interest is the assemblage from Queen

Elizabeth Square. The site was regarded as a relatively low-status rural site (Booth and Howard-Davis 2004, 24), but its pottery, when compared with Leybourne Grange and Springhead, suggests something more middle ranking in the early Roman period, perhaps a larger or nucleated settlement.

7. Petrographic analysis

Sean Patrick Quinn

7.1 Introduction and methodology

Thin section petrographic analysis was undertaken on a single sherd of pottery (taken from a strainer or colander (SF 1005) from context 1230) identified as fabric B9R. In addition to characterising its petrographic composition, analysis was undertaken in order to test the suggestion that it contained lithic inclusions of 'Kentish Rag'.

A small piece of the sherd was removed with a rotating diamond blade then impregnated with epoxy resin. The impregnated subsample was prepared as a standard petrographic thin section at the Institute of Archaeology, University College London (Quinn 2013, 23–33) and studied at magnifications of 25–400× under the polarising light microscope. The fabric of the sherd was characterized in terms of its dominant inclusions as well as the nature of its clay matrix and voids. An interpretation was made of the raw materials from which it was manufactured, as well as its paste preparation and firing technology. Specific attention was given to the possible presence of Kentish Rag inclusions, as well as other components suggested by macroscopic study, including glauconite and grog.

7.2 Petrographic characterization

The sherd consisted in thin section of a medium-grained fabric characterized by disaggregated silicified sandstone inclusions in a non-calcareous, vitrified clay matrix (Fig. 4A and C). The aforementioned inclusions consist of fragments of silica cemented sandstone, as well as

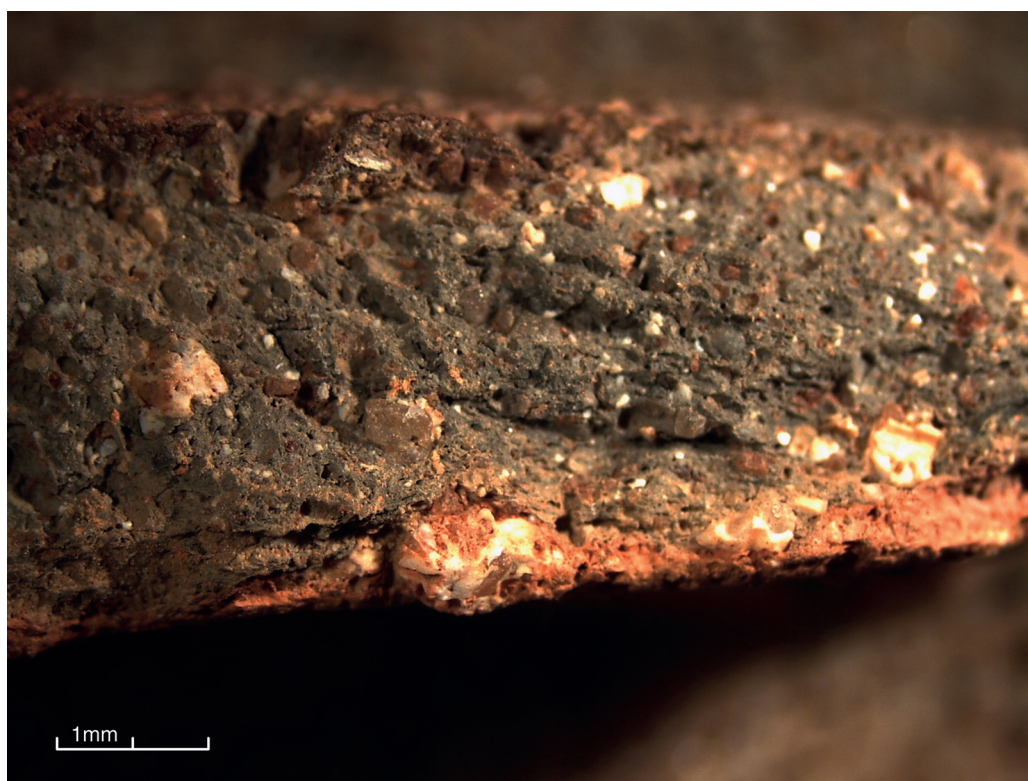


Figure 3. Photograph of break across sherd from vessel SF 1005 (fabric B9R), context 1230.

the disaggregated quartz class and matrix of this. This is composed of sparse fine to medium sand-sized rounded clasts of quartz and polycrystalline quartz in chert cement (Fig. 4B). The last is frequently chalcedonic and can be iron-stained. The high abundance of matrix in the sandstone means that sizeable fragments of this material exist (Fig. 4D). A couple of sandstone inclusions have an opaque matrix so could be classified as ironstone (Fig. 4E). The fragments of matrix and sandstone have an angular appearance, suggesting that they had been crushed and added as temper. The sample contains sparse fine sand-size rounded opaque inclusions which could be glauconite. A couple of clay-rich argillaceous features with sharp to merging boundaries occur in the prepared thin section (Fig. 4F). The sample has a non-calcareous clay matrix containing very fine quartz and sparse mica. It has low to moderate porosity composed of meso- and macro-elongate voids. The vessel from which the sherd originated was highly fired ($>850^{\circ}\text{C}$) above the point of vitrification. It has thin oxidised margins and a dark core.

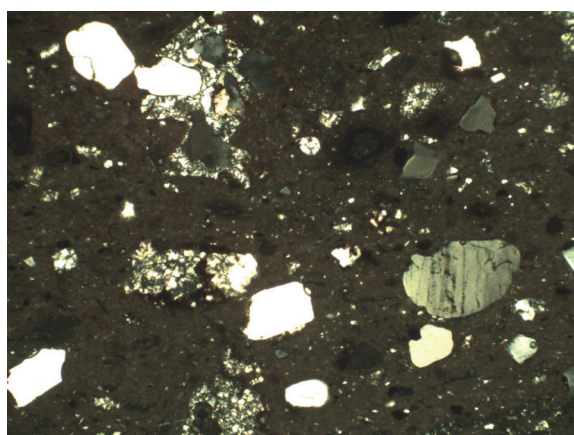
7.3 Discussion

The inclusions that characterize the sherd have a distinctive composition that suggest the use of a specific rock type during its manufacture. This was a silicified, cherty, quartz-rich, fine to medium-grained sandstone. The name ‘Kentish Rag’ or Kentish ragstone is used in the building trade to describe hard, grey sedimentary rock, quarried in the Weald of Kent, that has been used for construction since at least

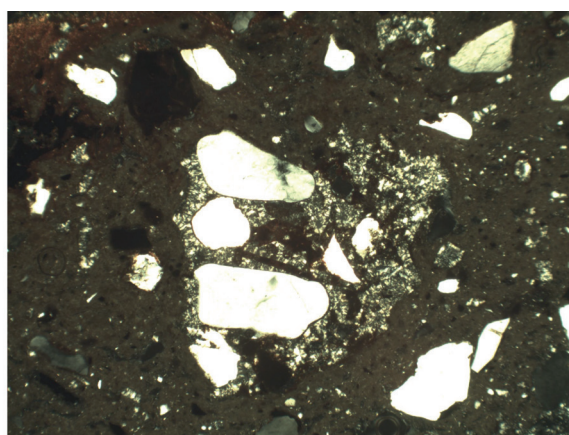
the Roman times. This material comes from the Early Cretaceous Hythe Formation and is composed of ‘sandy limestone consisting of rounded detrital grains of quartz and the green mineral glauconite, cemented by calcite’ (Worssam and Tatton-Brown 1993, 93). This rock outcrops in the Maidstone area and is extracted to the present day. The inclusions within the Leybourne Grange sherd are not composed of limestone, so do not appear to match the description of Kentish Rag. The material in the sample is not at all calcareous, but has siliceous cement instead.

In the western Weald, the Hythe Formation consists of non-calcareous sandstones (Gallois 1965, 32; Worssam and Tatton-Brown 1993, 94). This suggests that the Hythe Beds could be a possible source for the rock fragments within the sherd. However, such material cannot be termed ‘Kentish Rag’. Worssam and Tatton-Brown (1993, 94–5) report that layers of chert can occur within ragstone, including in the Maidstone area. This siliceous rock may be a candidate for the material found within the Leybourne Grange sherd. The presence of sand class within the inclusions rules out the use of flint nodules from the nearby chalk.

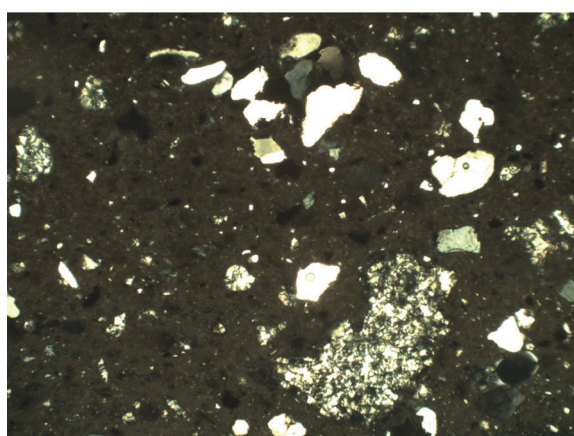
The presence of glauconite, suggested from the macroscopic study of the sherd seems to be supported by the rounded sand-sized opaque inclusions seen in thin section. It is not clear whether crushed pottery or ‘grog’ was added to the paste used to manufacture the point from which the Leybourne Grange sherd originated. One of the rare clay-rich argillaceous features present in the sample



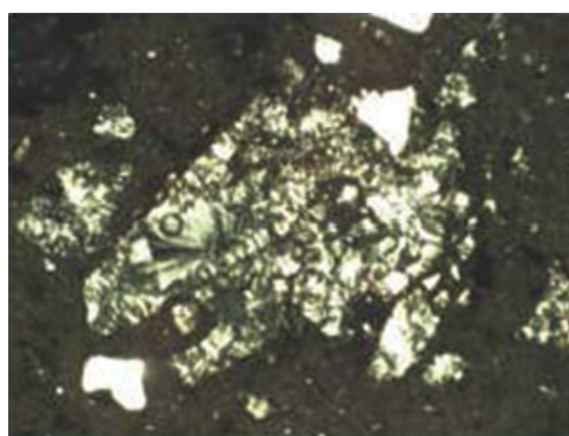
A - General view of the fabric



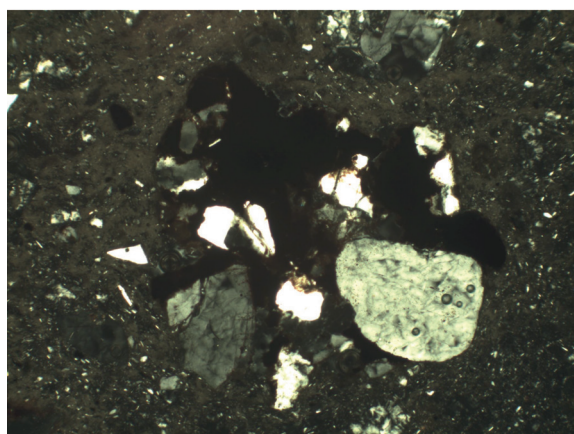
B - Silicified sandstone inclusion



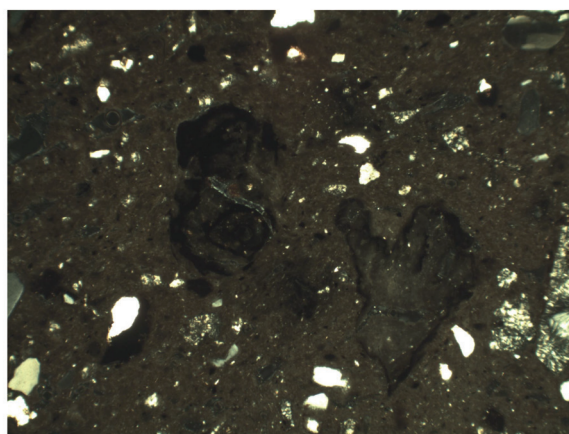
C - General view of the fabric



D - Chalcedony inclusion



E - Iron-cemented sandstone



F - Argillaceous inclusions

Figure 4. Thin section photomicrographs of sherd from vessel SF 1005, context 1230, in fabric B9R. Images taken in crossed polars. Image width = 2.9mm, except D and E = 1.45mm.

is angular and has sharp boundaries. However, the other is rounded with merging boundaries.

8. Sandstone-tempered pottery: A local and short-lived phenomenon?

The angular nature of the sandstone inclusions confirms that the sandstone had been deliberately crushed and

added to the clay as temper. The use of sandstone as an occasional tempering agent is notable, not having been previously recognised in Late Iron Age and Roman pottery in the region, although pottery containing what was identified as crushed malmstone, a form of sandstone, was recorded in the MoLAS evaluation at the site (Blackmore 2003, 42). This group took the second largest share of the evaluation assemblage, and it is likely that it is identical to

fabric B9R. Excavations along the nearby West Malling-Leybourne bypass (A228; see Fig. 1), however, identified no pottery with sandstone inclusions (Jones 2009). It is possible that sandstone fragments were present, but not identified, although the faceted bead-rimmed jars in which fabric B9R was principally available were not apparently identified on the bypass site, suggesting that the absence of the ware is genuine.

The source of the sandstone is uncertain, though a local origin is likely. Sandstone is found within the Hythe Formation, which is part of the Lower Greensand Group and extends in a curving band from the south Kent coast at Sandgate to the Surrey/Kent border via Ashford, Maidstone, Sevenoaks and Westerham (Worssam and Tatton-Brown 1993, 95). The Hythe Formation has a complex geology that encompasses a variety of lithologies, but is well-known for the seam of calcareous limestone or ragstone that outcrops in the Maidstone area. Ragstone has been quarried at least since the Roman period, the use of the stone in the buildings of Roman London and Kent being well-documented. The village of Leybourne sits on the northern edge of the Hythe Formation (the modern M20, M25 and M26 motorways in Kent essentially mark the boundary of the Lower and Upper Greensand groups). Worssam and Tatton-Brown (1993, fig. 2) show the sandstone occurring largely in the Weald west of Sevenoaks, around Westerham and further west some 25km west of Leybourne, while chert, which is also a component of fabric B9R, occurs more widely between Sevenoaks and Little Chart, south-east of Maidstone (see also Blows 2011, 7–9). The source of the sandstone may therefore have been west of Leybourne, beyond the Sevenoaks area and away from the quarries in the Maidstone area, for example at Quarry Wood in Loose, Boughton Monchelsea and Allington, that were exploited in the Roman period.

A siliceous, greyish white cherty sandstone is, however, also a component of the Folkestone Formation, on which Leybourne Grange sits. Outcrops of the stone were exploited in the Wrotham-Borough Green area c 10km west of Leybourne during the medieval and later periods, and there is known as Ightham Stone and Oldbury Stone (Blows 2011, 10). On the grounds of distance and composition, the Folkestone Formation is a more likely source for both the chert (which was also present in fabric LIAB4) and the sandstone. In any case, the use of the sandstone would seem to be unrelated to the origins of the Roman ragstone industry.

While ragstone was exploited for significant structural use from the Roman period onwards, potentially any variation of hard rock within the Hythe and Folkestone Formations is useful and would have been extracted from prehistoric times onwards regardless of precise composition. Small, shallow quarries, dug with hand tools and dating to the medieval period, are known in west Kent

(Simon Elliott pers. comm.), and the sandstone in the Leybourne Grange pottery may have derived from similar opportunistic, small-scale quarrying. Whether the stone would have been extracted by the potters themselves, who could have chipped small amounts from the exposed rock, or acquired by the potters as a by-product of unrelated quarrying activity, is uncertain. There is some question of whether the potters were local to Leybourne or worked in West Kent closer to the source of the sandstone. It may be noted that Patchgrove ware (R68), typically recorded as storage jars, as is the case at this site, is conventionally assigned a west Kent source on the basis of distribution (Tomber and Dore 1998, 167). It is possible that the potters responsible for Patchgrove ware were also involved in the manufacture of fabric BR9. So far, however, fabric BR9 has a very restricted distribution away from the potential sources of the sandstone in the Sevenoaks or Wrotham/Borough Green areas, although it is possible that inclusions identified on superficial examination as, say, flint or chert in pottery found closer to the source are in fact sandstone, and so the distribution could be wider. On current evidence, however, it appears likely that potters local to Leybourne Grange were responsible for procuring the sandstone, or else itinerant potters brought the sandstone from its source to the Leybourne area to manufacture pottery there.

Whether local or not the potters began using sandstone in the Late Iron Age and continued to use it into the Roman period. The increase in the proportion of fabric B9R evident in the Roman period is interesting, and may explain the absence of sandstone in the pottery of the bypass site. There, very little post-conquest material was recorded (Jones 2009, 21), and essentially activity had ceased by the mid-first century AD. The use of sandstone inclusions may therefore have been a phenomenon that began at the very end of the Late Iron Age when the bypass site had largely been abandoned. Indeed, from a ceramic perspective, there is little to separate the pre- and post-conquest groups if confirmed post-conquest material is absent, and the possibility that all the pottery from Leybourne Grange was deposited after AD 43 cannot be entirely excluded. Settlement activity at Leybourne Grange itself ceased during the mid/late first century AD. The paucity of North Kent fine wares or Upchurch wares (Monaghan 1987) – the white-slipped fabric (Monaghan 1987, fabric N4) is poorly represented, while the reduced fabric (Monaghan 1987, fabric N1) is absent – is especially telling and points to a terminal date for the settlement no later than c AD 70.

The apparent absence of sandstone inclusions in later Roman assemblages found on other sites in the region points very strongly to the use of sandstone being short-lived. The use of the sandstone may relate to a period of experimentation in the choice of tempers at a time of significant change in pottery repertoires, styles and technology and the emergence of Romanized

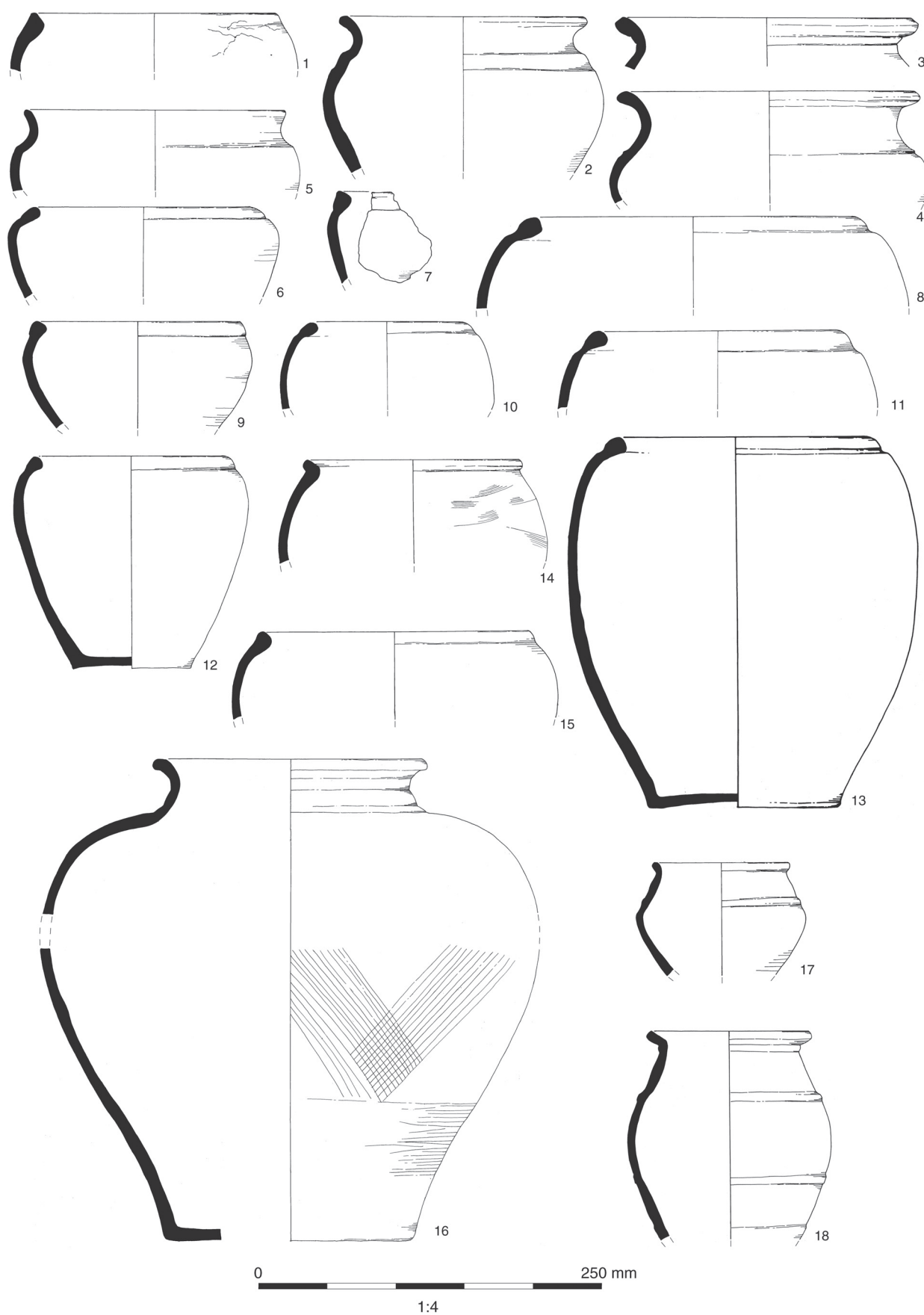


Figure 5. Pottery, catalogue nos 1–18.

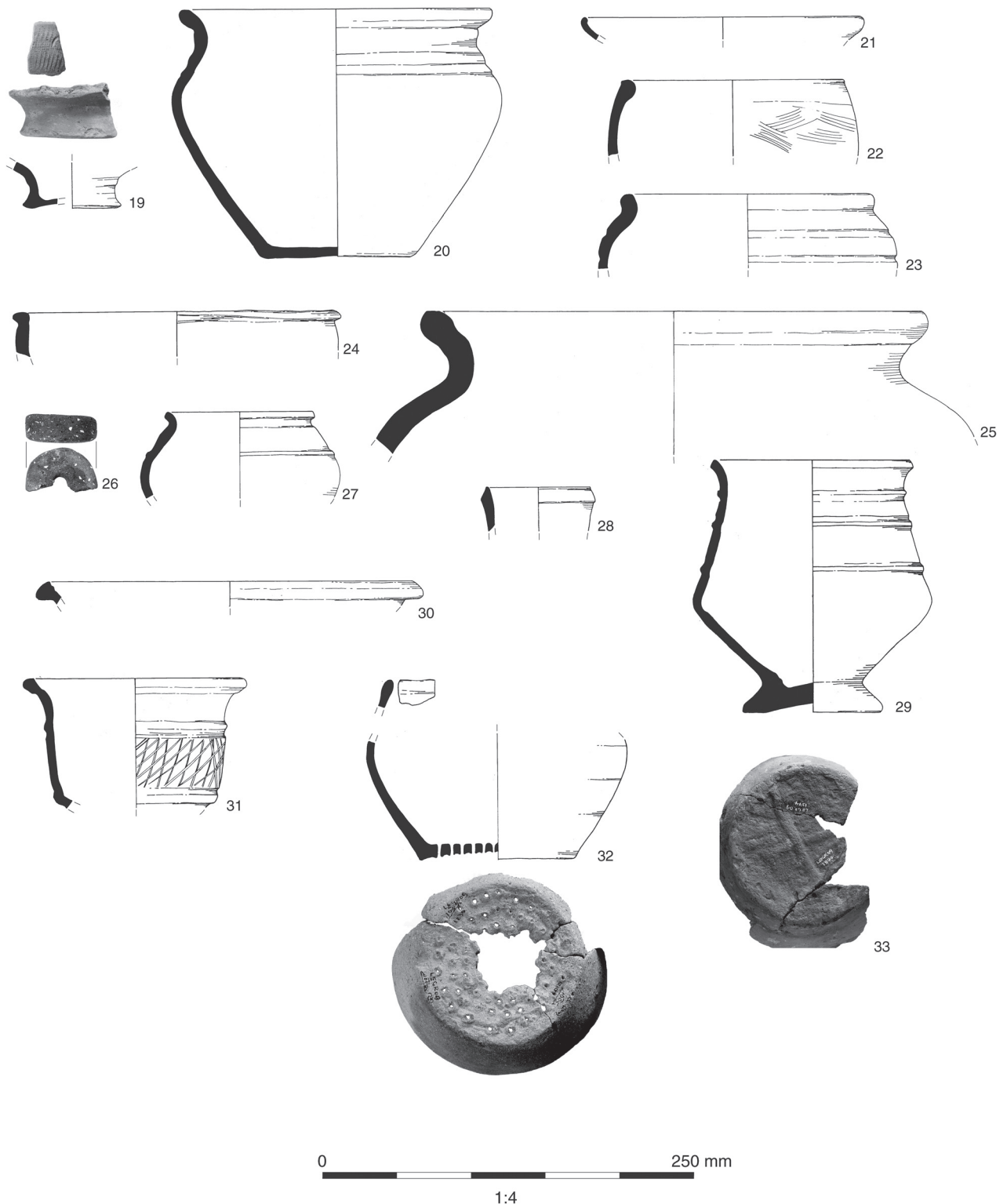


Figure 6. Pottery, catalogue nos 19–33.

ceramic traditions. However, re-examination of existing pottery assemblages from the region, and possibly further petrographic analysis, would be required to demonstrate that view conclusively.

9. Catalogue of the illustrated pottery

The illustrated vessels offer a snapshot of pottery supply to the site or show a range of intrinsically interesting pieces. Dates given are for deposition, not production or use.

**Context 1210, segment 1211, ditch 1381;
c AD 10–50**

1. Saucepan jar (CU); grog and shell-tempered ware (B5.1)
2. Everted-rim jar (CD) with corrugated shoulder and burnished rim, neck and shoulder, Thompson 1982, type B1–3; coarse grog-tempered ware (B2)
3. Everted-rim jar (CD); coarse grog-tempered ware (B2)
4. High-shouldered, necked and cordoned jar (CE) with burnished neck and shoulder; coarse grog-tempered ware (B2)
5. Everted-rim jar (CD) with burnished zone on rim and neck; grog and sand-tempered ware (B5)
6. Globular jar (CG) with burnished shoulder; sandstone-tempered ware (B9R)
7. Bead-rimmed jar (CH), grog and sand-tempered ware (B5)
8. Bead-rimmed jar (CH); sandstone-tempered ware (B9R)
9. Bead-rimmed jar (CH); sandstone-tempered ware (B9R)
10. Bead-rimmed jar (CH); sandstone-tempered ware (B9R)
11. Bead-rimmed jar (CH); sandstone-tempered ware (B9R)
12. Bead-rimmed jar (CH); sandstone-tempered ware (B9R)
13. Bead-rimmed jar (CH); sandstone-tempered ware (B9R)
14. Bead-rimmed jar (CH), Monaghan 1987, type 3F3; North Kent/South Essex shelly ware (R69)
15. Bead-rimmed jar (CH); grog and shell-tempered ware (B5.1)
16. Storage jar (CN), burnished on shoulder, Thompson 1982, type B1–2; coarse grog-tempered ware (B2)
17. Butt beaker (EA) or necked jar (CE), cordoned neck, overall burnishing; glauconitic Medway Valley ware (B9.1), with additional grog and quartz sand
18. Butt beaker (EA); glauconitic Medway Valley ware (B9.1), with additional grog
19. Beaker in fine sandy buff-brown fabric with external red-brown slip, perhaps Terra Rubra (B12)
20. Necked bowl (HD), with corrugated neck and shoulder, Thompson 1982, type D1–4; coarse grog-tempered ware (B2)
21. Platter (JC), fine sandy ware (B8)

**Context 1020, segment 1019, ditch 1381;
c 50 BC–AD 50**

22. Barrel-shaped (CB) or bead-rimmed (CH) jar, with combed or scored decoration on body; glauconitic Medway Valley ware (B9.1)
23. Globular jar (CG) with grooved shoulder; glauconitic Medway Valley ware (B9.1)

24. Bead-rimmed jar (CH); glauconitic Medway Valley ware (B9.1)
25. Storage jar (CN); glauconitic Medway Valley ware (B9.1)
26. Spindle whorl, shaped and perforated before firing; glauconitic Medway Valley ware (B9.1)

Other pottery

27. Globular jar (CG), with cordon on shoulder, Monaghan 1987, type 3E0; glauconitic Medway Valley ware (B9.1). Context 1292, segment 1211, ditch 1381; c 50 BC–AD 50.
28. Bell-shaped cup (FB), copying Cam 56; fine red-surfaced grog-tempered ware. Context 1244, segment 1384, ditch 1385; c AD 40/50.
29. Carinated bowl (HA) with cordoned body and pedestal base; glauconitic Medway Valley ware (B9.1). Context 1229, segment 1227, ditch 1385; c AD 40/50.
30. Platter (Cam 5), Terra Nigra (BER12). Context 1232, segment 1233, ditch 1385; c AD 40–55.
31. Carinated bowl (HA), with burnished lattice between cordons, possibly copying Gallo-Belgic girth beaker; fine red-surfaced grog-tempered ware (R154). Context 1292, segment 1211, ditch 1281; c 50 BC–AD 50.
32. Strainer/colander (MG), with base pierced before firing, then perforated with larger central hole after firing; sandstone-tempered ware (B9R), oxidised surfaces. SF 1005, context 1230, segment 1227, ditch 1385; c AD 40/50.
33. External surface of jar base showing cross motif in relief formed from applied strips before firing, possibly to strengthen the base; sandstone-tempered ware (B9R). Context 1374, pit 1299; c 50 BC–AD 50.

10. Conclusion

The pottery assemblage recovered from Leybourne Grange in Kent dates to the Late Iron Age and early Roman transition. The near-absence of North Kent fine wares (Monaghan 1987) and comparison with other assemblages in the region suggest that the pottery was deposited no later than c AD 70. The assemblage was dominated by grog-tempered wares and jars and bowls that display evidence of utilitarian use, although a more diverse repertoire was evident in groups assigned to the early Roman period. The pottery had been deposited mainly into enclosure and field boundary ditches that were associated with a basic-level rural settlement. However, imports such as amphorae and samian and other traded pottery such as Patchgrove ware suggest that the site was located into wider trading networks. A notable aspect of the assemblage was the presence of pottery tempered with rock fragments initially thought to be ragstone, but identified by petrographic analysis as sandstone. Sandstone is found within the Hythe

Formation, which forms part of the geology of the site, and therefore the pottery is likely to have been made close to the settlement. Despite the availability of the tempering material, however, sandstone-tempered pottery appears to have been a local and short-lived phenomenon, not being recognised away from the site and in later Roman assemblages in the region. The use of sandstone may represent a period of experimentation during a time of change in ceramic traditions, but further scientific analysis of assemblages in the region may be required before this can be confirmed.

Acknowledgements

The author is indebted to Taylor Wimpey SW Thames for funding the archaeological fieldwork and post-excavation programme. Special thanks are owed to Paul McKeown, formerly technical manager of Taylor Wimpey, and Ben Connop, Taylor Wimpey's senior design and planning executive, for ensuring that the project proceeded smoothly. The author is also grateful to Wendy Rogers, Senior Archaeological Officer for Kent County Council, for her support. The fieldwork was managed by Timothy Haines and latterly by David Score. The post-excavation project was managed by the author. The pottery was drawn by Magdalena Wachnik. Georgina Slater and Charles Rousseaux prepared the site figures, which were based on plans digitised by Mark Littlewood and Anne Kilgour. The author is grateful to Dr Patrick Quinn of UCL Institute of Archaeology for his rapid and expert petrographic analysis, and to the two referees for their helpful comments and suggestions. The site code for the excavation is LEGR09; the code for the watching brief is LEGR11.

Bibliography

- Biddulph, E. 2004. Iron Age and Roman pottery, in P. Booth and C. Howard-Davis *Prehistoric and Romano-British Settlement at Queen Elizabeth Square, Maidstone*, Oxford Archaeology Occasional Paper 11, Oxford, 15–21.
- Biddulph, E. 2011. Late Iron Age and Roman pottery, in A. Simmonds, F. Wenban-Smith, M. Bates, K. Powell, D. Sykes, R. Devaney, D. Stansbie and D. Score *Excavations in North-West Kent 2005–2007: One Hundred Thousand Years of Human Activity in and around the Darent Valley*, Oxford Archaeology Monograph 11, Oxford, 116–24.
- Biddulph, E. 2017. A late Iron Age and early Roman settlement at Leybourne Grange, West Malling, Kent, Kent Archaeological Reports online. http://www.kentarchaeology.org.uk/10/Leybourne_Grange_Oxford_Archaeology.pdf
- Blackmore, L. 2003. Pottery assessment, in MoLAS *Leybourne Grange Hospital, Birling Road, Leybourne, Kent: An archaeological evaluation report*, unpublished report by Museum of London Archaeology Service, 41–7.
- Blows, J. 2011. *Strategic Stone Study: A building stone atlas of Kent*, London.
- Booth, P. no date. *Oxford Archaeology Roman pottery recording system: an introduction (revised June 2007)*, unpublished document, Oxford Archaeology.
- Booth, P. and Howard-Davis, C. 2004. *Prehistoric and Romano-British Settlement at Queen Elizabeth Square, Maidstone*, Oxford Archaeology Occasional Paper 11, Oxford.
- CAT no date. *Canterbury Ceramics 2: The processing and study of excavated pottery*, unpublished report by Canterbury Archaeological Trust.
- Couldrey, P. 1984. The Iron Age pottery, in B. Philp *Excavations in the Darent Valley, Kent*, Dover, 38–71.
- Drury, P.J. 1978. *Excavations at Little Waltham, 1970–71*, CBA Research Report 26, London.
- Drury, P.J. and Rodwell, W.J. 1973. Excavations at Gun Hill, West Tilbury, *Essex Archaeology and History*, 5, 48–112.
- Evans, J. 2001. Material approaches to the identification of different Romano-British site types, in S. James and M. Millett (eds) *Britons and Romans: Advancing an archaeological agenda*, CBA Research Report 125, York, 26–35.
- Gallois, R.W. 1965. *British Regional Geology: The Wealden District*, Keyworth, Nottingham.
- Hawkes, C.F.C. and Hull, M.R. 1947. *Camulodunum: First Report on the Excavations at Colchester, 1930–1939*, Reports of the Society of Antiquaries of London 14, London.
- Jefferies, R. and Lucy, S. 2016. Romano-British pottery, in S. Lucy and C. Evans, with R. Jefferies, G. Appleby and C. Going, *Romano-British Settlement and Cemeteries: Mucking Excavations by Margaret and Tom Jones, 1965–1978*, Oxford, 154–99.
- Jones, G.P. 2006. The later prehistoric pottery from Eyhorne Street, Hollingbourne, Kent (420 68+100-68+500 99), *CTRL Specialist Report Series*, Archaeological Data Service, http://archaeologydataservice.ac.uk/catalogue/adsdata/arch-335-1/dissemination/pdf/PT2_Spec_Reps/01_Ceramics/CER_research_reports/CER_LaterPrehistoricPot/CER_LaterPrehistoricPot_Text/CER_LPR_EYH_text.pdf?CFID=45&CFTOKEN=454ECBCD-4089-404A-BD2E40E91FF417B6
- Jones, G.P. 2009. Later prehistoric and Roman pottery, in P. Andrews, K.E. Dinwiddy, C. Ellis, A. Hutcheson, C. Phillpotts, A.B. Powell and J. Schuster *Kentish Sites and Sites of Kent: A Miscellany of Four Archaeological Excavations*, Wessex Archaeology Report 24, Salisbury, 18–31.
- Jones, M.U. and Rodwell, W.J. 1973. The Romano-British pottery kilns at Mucking, *Essex Archaeology and History*, 5, 13–47.
- Kelly, D.B. 1971. Quarry Wood Camp, Loose: a Belgic oppidum, *Archaeologia Cantiana*, 86, 55–84.
- Lyne, M. 2006a. The late Iron Age and Roman pottery from Thurnham Roman Villa, Thurnham, Kent, *CTRL Specialist Report Series*, Archaeological Data Service, http://archaeologydataservice.ac.uk/catalogue/adsdata/arch-335-1/dissemination/pdf/PT2_Spec_Reps/01_Ceramics/CER_research_reports/CER_RomanPot/CER_RomanPot_Text/CER_ROM_THM_text.pdf?CFID=45&CFTOKEN=454ECBCD-4089-404A-BD2E40E91FF417B6
- Lyne, M. 2006b. The late Iron Age and Roman Pottery from Snarkhurst Wood, Hollingbourne, Kent (ARC SNK99), *CTRL Specialist Report Series*, Archaeological Data Service, http://archaeologydataservice.ac.uk/catalogue/adsdata/arch-335-1/dissemination/pdf/PT2_Spec_Reps/01_Ceramics/CER_research_reports/CER_RomanPot/CER_RomanPot_Text/CER_ROM_

- SNK_text.pdf?CFID=45&CFTOKEN=454ECBCD-4089-404A-BD2E40E91FF417B6
- Monaghan, J. 1987. *Upchurch and Thameside Roman Pottery: A ceramic typology for northern Kent, 1st to 3rd centuries AD*, BAR British Series 173, Oxford.
- Morris, E.L. 2006. The late prehistoric pottery from White Horse Stone, Pilgrim's Way, Boarley Farm and Boarley Farm West, Boxley, Kent, *CTRL Specialist Report Series*, Archaeology Data Service, http://archaeologydataservice.ac.uk/archiveDS/archiveDownload?t=arch-335-1/dissemination/pdf/PT2_Spec_Reps/01_Ceramics/CER_research_reports/CER_RomanPot/CER_RomanPot_Text/CER_ROM_WHS_text.pdf?CFID=45&CFTOKEN=454ECBCD-4089-404A-BD2E40E91FF417B6
- Pollard, R.J. 1987. *The Roman Pottery of Kent*, Maidstone.
- Quinn, P.S. 2013. *Ceramic Petrography: The interpretation of archaeological pottery and related artefacts in thin section*, Oxford.
- Seager Smith, R., Brown, K.M. and Mills, J.M. 2011. The pottery from Springhead, in E. Biddulph, R. Seager Smith and J. Schuster, *Settling the Ebbsfleet Valley. High Speed 1 Excavations at Springhead and Northfleet, Kent: The Late Iron Age, Roman, Saxon, and Medieval landscape. Volume 2: Late Iron Age to Roman finds reports*, Oxford and Salisbury.
- Stansbie, D. 2006. The late Iron Age and Roman pottery from White Horse Stone, Boxley, Kent, *CTRL Specialist Report Series*, Archaeology Data Service, http://archaeologydataservice.ac.uk/catalogue/adssdata/arch-335-1/dissemination/pdf/PT2_Spec_Reps/01_Ceramics/CER_research_reports/CER_RomanPot/CER_RomanPot_Text/CER_ROM_WHS_text.pdf?CFID=45&CFTOKEN=454ECBCD-4089-404A-BD2E40E91FF417B6
- Thompson, I. 1982. *Grog-tempered 'Belgic' Pottery of South-Eastern England*, BAR British Series 108, Oxford.
- Tomber, R. and Dore, J. 1998. *The National Roman Fabric Reference Collection: A Handbook*, Museum of London Archaeology Services, Monograph 2, London.
- Worssam, C. and Tatton-Brown, T. 1993. Kentish Rag and other Kent building stones, *Archaeologia Cantiana*, 112, 93–126.

Fifth and sixth century African Red Slip and Late Roman C wares from *Ossonoba* (Faro, Algarve, Portugal): the assemblage from Horta da Misericórdia

Edgar Fernandes

Abstract

This paper focuses on the fifth and sixth century African Red Slip and Late Roman C wares found at Horta da Misericórdia, an archaeological area within the ancient walls of Ossonoba, modern-day Faro (Algarve, Portugal). The aim is to provide additional data for the wider picture of this city's import trade in the Roman and Late Antique periods, as outlined by Catarina Viegas. In her study of the Roman settlement and economy in the central and eastern Algarve (2011), Viegas showed that pottery from all over the Empire – particularly from its western provinces – was imported to Ossonoba in Roman and Late Antique times. Alongside ceramic assemblages from other key sites in the region, she examined the amphorae and the fine wares from two areas of modern Faro (the Oceanus Mosaic and the Municipal Museum sites). The fifth and sixth century African Red Slip and Late Roman C wares analyzed by Viegas show a strong decline in their numbers already from the mid-fifth century onward. In contrast, however, the excavations undertaken by Teresa Júdice Gamito at Horta da Misericórdia unearthed a large amount of fifth and sixth century African Red Slip and Late Roman C wares, indicating a clearer continuity in the import trade to Ossonoba until the mid-sixth century.¹

Keywords: *Ossonoba*/Faro; southern *Lusitania*/southern Portugal; Late Antiquity; fine wares; African Red Slip ware; Late Roman C ware; trade

1. Introduction

Faro, the ancient city of *Ossonoba* (Fig. 1), is located on the south-eastern Portuguese coast. An important urban centre from at least the Roman period, it has been, since the Early Modern era, the capital of the Algarve, once a kingdom under the Portuguese monarchs, now the southernmost region of Portugal. The Roman presence in Faro is well-known from several archaeological excavations in the urban area, undertaken since the late nineteenth century and particularly from the 1930s onwards (see Viegas 2011, 79–98 for a comprehensive overview of the archaeological research on the Roman occupation in Faro). Roman and Late Antique trade to *Ossonoba* was not dealt with until the study of Catarina Viegas (2011). By analyzing the amphorae and the fine wares from two pottery assemblages she produced the first and only major overview on this subject, which is essential reading for any researcher interested in understanding the Roman and Late Antique period in Faro.

In this paper I hope to make a new contribution to the knowledge of the Late Antique import trade to *Ossonoba*

through the study of the fifth and sixth century African Red Slip (ARS) and Late Roman C (LRC)² wares from the assemblage of Horta da Misericórdia, as these fine wares are far more abundant in this collection than in the two assemblages analyzed by Viegas.

2. Fourth to sixth century imports of African Red Slip and Late Roman C wares in *Ossonoba*: the evidence of the assemblages from the Oceanus Mosaic and the Municipal Museum sites

As mentioned above, the import trade to *Ossonoba* during Roman and Late Antique times was treated by Viegas in the framework of a study on the Roman settlement and economy in the central and eastern Algarve. As for two other key sites in the region – the ancient cities of *Balsa* (near modern Tavira) and *Baesuri* (Castro Marim) – Viegas analyzed the amphorae and fine wares from two areas in modern Faro: one within (the Municipal Museum site), the other outside (the Oceanus Mosaic site) the walls

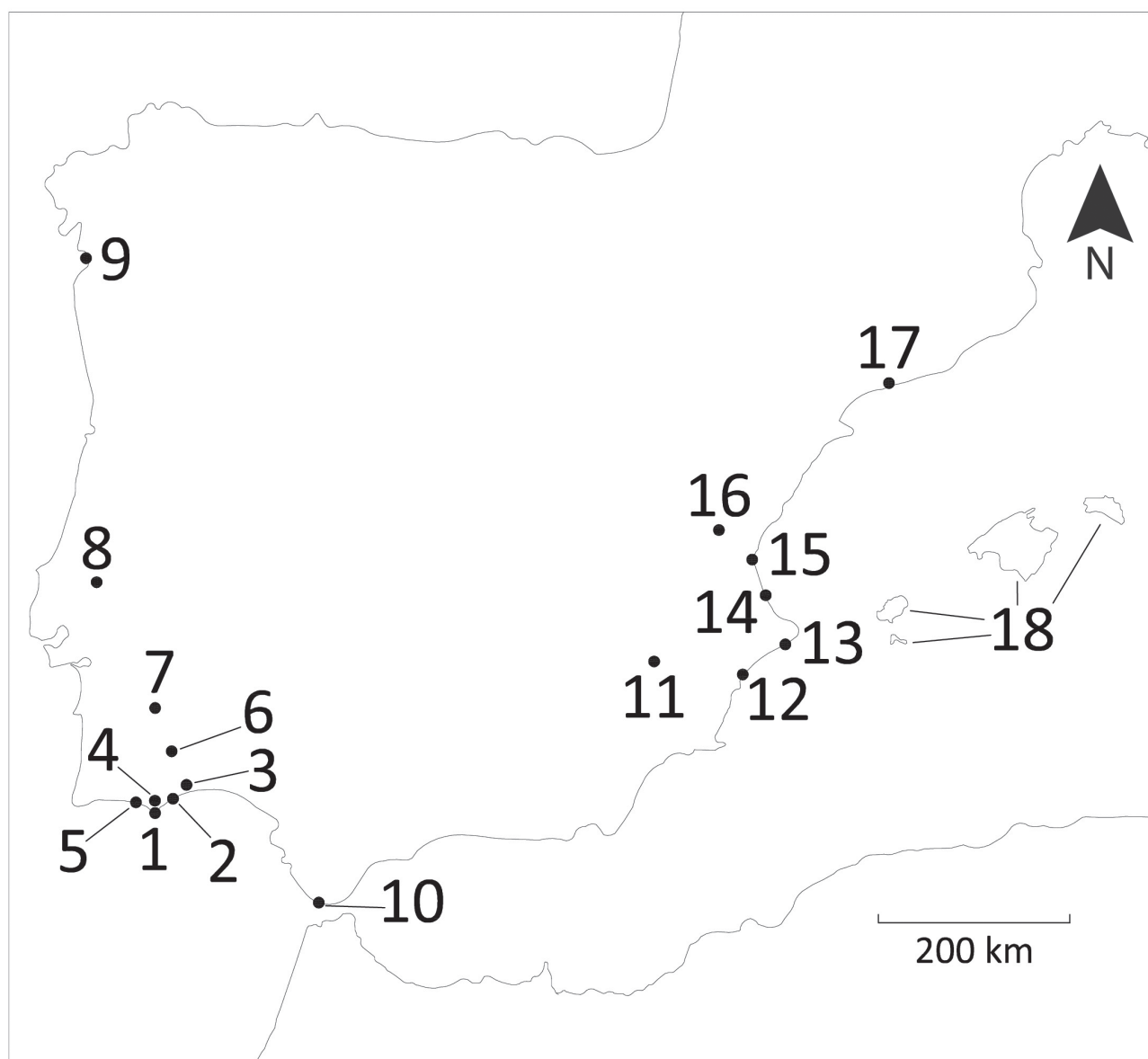


Figure 1. Sites in the Iberian Peninsula mentioned in the text (adapted from Google Maps, accessed on the 27th January 2016): 1 Ossonoba/Faro; 2 Balsa; 3 Baesuri/Castro Marim; 4 Milreu; 5 Cerro da Vila; 6 Myrtilis/Mértola; 7 Pax Iulia/Beja; 8 Scallabis/Santarém; 9 Vicus Elanei (?)/Vigo; 10 Baelo Claudia; 11 Eio/Tolmo de Minateda; 12 Lucentum/Benalúa-Alicante; 13 Garganes-Altea; 14 Cullera; 15 Valentia/Valencia; 16 Edeta/Liria; 17 Tarraco/Tarragona; 18 The Balearic Islands.

of ancient *Ossonoba*.³ Being the first, and to date only, study on amphora and tableware imports to *Ossonoba* to be undertaken in a systematic and comprehensive way, Viegas' work is crucial to understanding the trends in imports for this area of southern *Lusitania* during the Roman and Late Antique periods (Viegas 2011).

While fourth century ARS is still very common in the assemblages studied by Viegas, fifth century ARS is scarce, particularly the forms dated to the second half of the century. The only exception to this picture would be Hayes 67, well-represented with 31 vessels (see Viegas 2011, 158, table 15). Despite the rarity of ARS forms dated to the late fifth and sixth centuries, it is clear from these two assemblages that fine ware imports did not cease until

at least the mid-sixth century, as proven by the occurrence of a rim of Hayes 104B and two decorated fragments of Style E (ii) (Viegas 2011, 164, 169).

3. The excavations at Horta da Misericórdia

Horta da Misericórdia is an area within the ancient walls of *Ossonoba*/Faro that was given to the Santa Casa da Misericórdia ('Holy House of Mercy', the name of several Portuguese lay social institutions of Catholic inspiration) of Faro as a vegetable garden ('horta') in the early twentieth century. It is located next to the Municipal Museum of Faro and it is adjacent to a square behind the cathedral (Figs 2 and 3). In 1984, 1992–1993 and



Figure 2. Map of Faro with the locations of: 1 Horta da Misericórdia; 2 the Municipal Museum; and 3 the Oceanus Mosaic (after Viegas 2011, 98, fig. 26). Adapted with the aid of Google Maps, accessed on the 19th October 2017.

1997–2000, Teresa Júdice Gamito (1936–2006) conducted archaeological excavations at Horta da Misericórdia. She thought that this particular area deserved to be investigated because it is located inside the walls and close to both the cathedral and the Arco do Repouso (‘Arch of Rest’), which is one of the main entrances to the walled area of Faro. A test pit (4 × 6m) conducted by Gamito in November 1984 unveiled some structures damaged by the 1755 Lisbon earthquake, along with interesting pottery findings, including a fragment of an Islamic mosque lamp. Later, after the Municipal Council of Faro acquired Horta da Misericórdia in order to expand the Municipal Museum (a project which has not yet been undertaken), Gamito conducted excavations in sectors A, B, C and D in 1992–1993, and in sectors D, E, F and G in 1997–2000 (Gamito 2007, 50).

Thanks to the description made by Gamito, we know that Sector A was probably filled with soil coming from Largo da Sé (the cathedral’s square). Sectors B and C had only a thin archaeological layer above the bedrock that yielded Italian majolica and Chinese porcelain. In

Sector D a medieval house, an Islamic house and a Roman sewer were discovered. In Sector E the findings included two Islamic houses, a cistern or well and a cobble stoned street, as well as Roman sewers and some Roman coarse wares. The courtyard that gives access to the cistern was located in Sector F. During the sixteenth century, a storage facility was built on the courtyard pavement. There was also an olive oil press nearby. This courtyard was interpreted as a working, public area, with access to the rest of the city. It was, furthermore, connected to a sector of private housing. The ruins of a possible Late Roman house were discovered under the pavement of the cistern courtyard, either in Sector F or G. Another courtyard paved with floor tiles and surrounded by column bases, which was interpreted as a possible *peristylum*, was also exposed (Gamito 2007, 50–7).

The Late Antique fine wares studied in this paper are stored at the University of the Algarve, where Teresa Júdice Gamito was a Full Professor of Archaeology, and I have been examining them as part of my ongoing doctoral project (see acknowledgements). Although the excavations

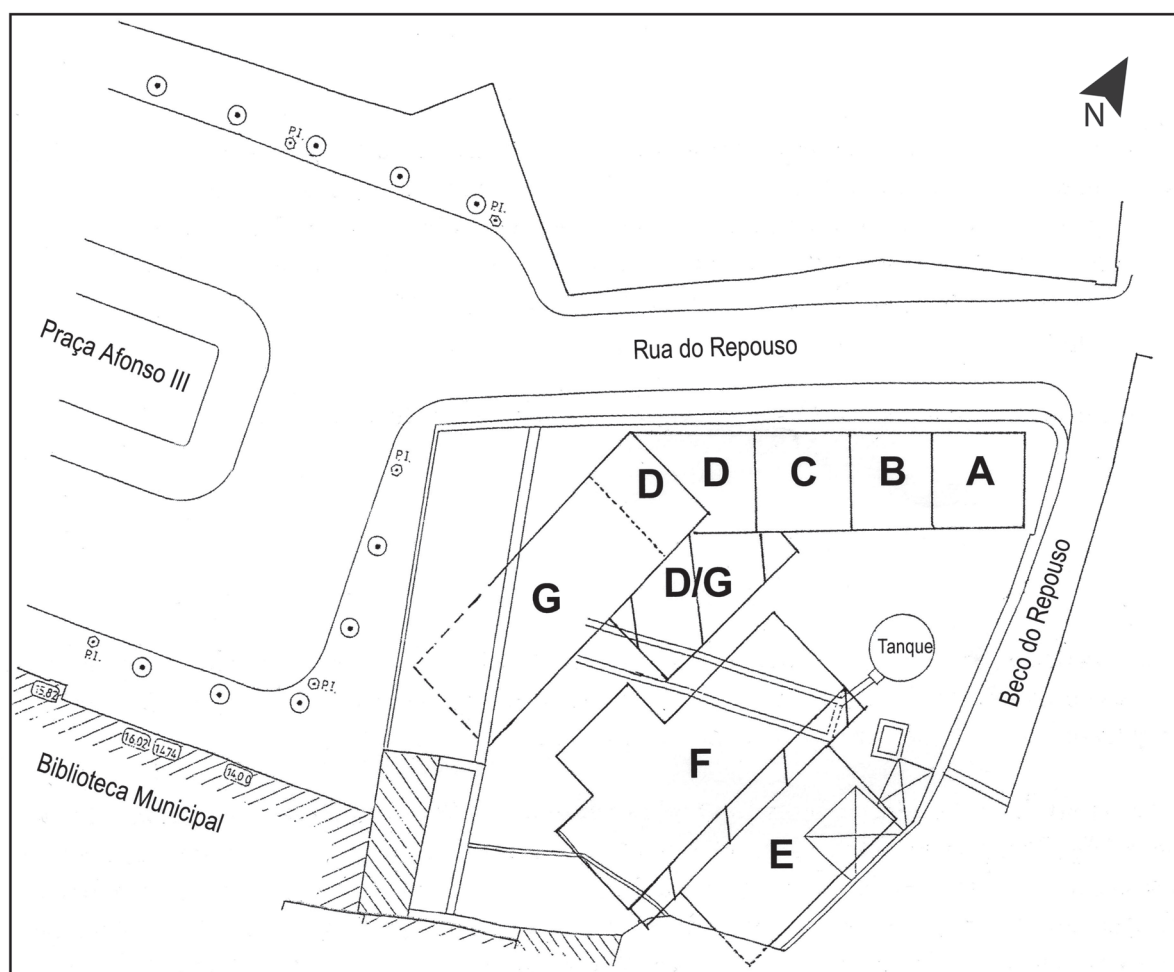


Figure 3. General plan of the excavations at Horta da Misericórdia (after Gamito 2007, 51, fig. 3.4).

Table 1. Most frequent fourth century ARS forms from Ossoinoba/Faro (according to Viegas 2011, 158, table 15)

ARS forms	Oceanus Mosaic (MNV)	Municipal Museum (MNV)
Hayes 50	4	—
Hayes 50A	—	6
Hayes 50B	—	7
Hayes 58	4 (ARS D)	5 (ARS C) + 9 (ARS D) = 14
Hayes 59	1	13
Hayes 61A	2	2 (ARS C) + 14 (ARS D) = 16
Hayes 67	3 (ARS D)	1 (ARS C) + 27 (ARS D) = 28

were carried out and recorded stratigraphically, the absence of any accompanying documentation concerning stratigraphy in the University of the Algarve has meant that it has been impossible to tie any of the finds to the stratigraphic sequence. This circumstance has limited, to an extent, the kind of analytical procedure that can be conducted in the present paper, as the lack of context prevents us from discussing the occurrence of forms within a stratigraphic sequence, and also from estimating the relative proportions of different wares within each of

Table 2. Fifth and sixth century ARS forms from Ossoinoba/Faro (according to Viegas 2011, 158, table 15)

ARS forms	Oceanus Mosaic (MNV)	Municipal Museum (MNV)
Hayes 61B	1	—
Hayes 63	—	3
Hayes 64	—	1
Hayes 67	3 (ARS D)	1 (ARS C) + 27 (ARS D) = 28
Hayes 76	1	5
Hayes 80B	—	5
Hayes 87	—	2
Hayes 91	1	5
Hayes 99	—	1
Hayes 103	—	1
Hayes 103A	—	1
Hayes 104	—	1
Hayes 104A	—	1

the various stratigraphic phases. Despite these limitations, the results of the analysis of the assemblage from Horta da Misericórdia are still capable of improving our understanding of the Late Antique import trade to *Ossoinoba*, as we shall see below.

Table 3. Fifth and sixth century LRC forms from Ossonoba/Faro (according to Viegas 2011, 173, table 17)

LRC Forms	Oceanus Mosaic (MNV)	Municipal Museum (MNV)
Hayes 3	1	6

4. Fifth and sixth century African Red Slip and Late Roman C wares from Horta da Misericórdia

4.1 Methodology

Roman fine wares from Horta da Misericórdia had already been sorted out and stored in specific containers by the team of Teresa Júdice Gamito. I identified and classified late ARS and LRC fragments from these containers, and also sorted a few Roman fine wares stored in another container, from which I selected some more late ARS fragments. Only rims, bases and decorated ARS and LRC fragments that can be attributed to the fifth and sixth centuries with certainty will be analysed here in detail. Fourth century forms that continued only into the very beginning of the fifth century, such as Hayes 59B or 61A, will not be considered. The statistical quantification method of the minimum number of vessels (MNV), established by the protocol of Mont Beuvray (Arcelin and Tuffreau-Libre 1998), will be followed.

As a consequence of the lack of stratigraphic references mentioned above, in this paper I preferred to focus on forms and productions, rather than on the chronologies of each form and type.⁴ However, it is important to state that, in most cases, fabrics were not analyzed by inspecting clean, recent fractures, because I considered that creating new samples was not logistically viable. Nevertheless, recent fractures were examined whenever they were present. I followed the descriptions of fabrics and slips in *Late Roman Pottery* – hereinafter *LRP* – (Hayes 1972, 290–2) and *Atlante delle forme ceramiche, I* – hereinafter *Atlante I* – (Carandini 1981, 58–60, 78–9, 119) for the distinction of the various Late Antique ARS productions. The chrono-typological works primarily used for the dating of ARS and LRC forms in this article are *LRP* (Hayes 1972), *Atlante I* (Carandini 1981) and *Études sur la céramique romaine tardive d'Afrique* (Bonifay 2004). Other studies were used for dating these ceramics whenever necessary, the most important of them being Fulford (1984a) and the texts by the *LRFW* Working Group (2011a; 2011b).

Four additional methodological notes are in order. First, trends in the importation of ARS and LRC to *Ossonoba* in this period will be illustrated by means of linear graphs containing the import probabilities for a given time span, according to the method formulated by Elizabeth Fentress and Philip Perkins (1988). Secondly, the vessels will be identified by the same number in the drawings and in the tables in which ARS and LRC are catalogued, following Hayes' practice in *LRP*. Thirdly, whenever the

orientation of a vessel is hypothetical, based on the normal orientation of the form to which that fragment belongs, it is represented by means of a dashed line. Finally, the results may still require minor adjustments in the future, but these will hardly change the overall picture presented here.

4.2 African Red Slip ware

ARS is by far the most abundant Roman and Late Antique fine ware represented in the assemblage from Horta da Misericórdia. It is also noticeable that the absolute quantities of fifth and sixth century ARS are higher in this assemblage than in the ones studied by Viegas. Let us consider firstly the most frequent ARS forms dated to the fourth century – Hayes 50A, 50A/B, 50B, 58B, 59 and 61A – from Horta da Misericórdia and from the two assemblages studied by Viegas (2011, 158, table 15). There are fourteen vessels of these forms in the assemblage from the Oceanus Mosaic site, 79 in the assemblage from the Municipal Museum site, and 118 (at most) in the assemblage from Horta da Misericórdia. In the case of the fifth and sixth century ARS, there are six vessels from the Oceanus Mosaic, 54 from the Municipal Museum, and as many as 165 from Horta da Misericórdia. If we calculate the proportion of fifth and sixth century ARS present in relation to the abovementioned fourth century ARS forms, the difference between the three assemblages becomes clearer. At the Oceanus Mosaic site the amount of fifth and sixth century ARS corresponds to 42.86% of the most common fourth century forms; in the case of the Municipal Museum site, the figure is 68.35%; at Horta da Misericórdia, however, this value rises to 139.83%, much higher than the other two assemblages. Table 5 summarises the range of fifth and sixth century ARS forms and decorated fragments from Horta da Misericórdia, as well as their quantities. Drawings of these ARS vessels are presented in Figs 4, 5 and 6.

4.3 Late Roman C ware

LRC is the most widespread non-African Late Antique fine ware imported to *Hispania*.⁵ It is also present in the assemblage from Horta da Misericórdia, but in much

Table 4. Most frequent fourth century ARS forms from Horta da Misericórdia

ARS forms	Horta da Misericórdia (MNV)	ARS production
Hayes 50A	40 rim fragments	ARS C1/2; possibly some ARS C3
Hayes 50A/B	8 rim fragments	ARS C1/2 and ARS C3
Hayes 50B	9 rim fragments	ARS C3, D1 and D2. Mostly D1
Hayes 58B	16	ARS D1; possibly some ARS D2
Hayes 59	26	ARS D1
Hayes 61A	19	ARS D1

Table 5. Fifth and sixth century ARS forms and decorated fragments from Horta da Misericórdia

No.	Form	MNV	Production and additional comments
1–2	Hayes 52, late	2	1: Light ARS C3. 2: ARS C4
3–5	Hayes 59, late	3	3–4: Granular ARS D1. 5: Fine; ARS D1
6	Hayes 59, late?	1	3 is composed by two non-conjoining rim fragments ARS D1. Downturned rim. Fine fabric and semi-lustrous slip, very close to ARS C. Subtle ‘staircase’, higher on the outside. Might it be a fourth century variant of Hayes 58B or a classical Hayes 59?
7	Hayes 61A/B	1	ARS D1. Broken lip. Shape not far from Hayes 61A/B3, but with a more closed carination. Granular fabric and heterogeneous slip, both matt/thin and glossy/thick
8–11	Hayes 61A/B2	4	ARS D1. 9: Greyish, most probably due to burning
12–13	Hayes 61A/B3	2	ARS D1
14	Hayes 61A/B4	1	ARS D1
15–16	Hayes 61B2	2	15: ARS D1. 16: ARS D2
17	Hayes 61B or 87A/88	1	ARS D2. Broken lip
18	Hayes 63	1	ARS D1
19–23	Hayes 67B	5	ARS D1. 22: Upper part of rim missing
24–25	Hayes 67C	2	25: ARS D1. 24: ARS D2
26–29	Hayes 67, <i>similis</i>	4	ARS D1. 26: Lip like Hayes 67A or B 27–29: Lip like Hayes 67B or C
30–40	Hayes 67/71 (as 67B)	11	30–32: ARS C4. 33–40: ARS D1
41	Hayes 68, <i>similis</i>	1	34: Three grooves on rim ARS C-like. Pale light orange fabric, fine-grained, a little splintery, with regular fractures, some of them clearly conchoidal. Pale deep orange slip, a little mottled, rather glossy and smooth. Soft-fired. It resembles early ARS C, but slightly more granular, with somewhat less glossy slip
42	Hayes 70, <i>similis</i>	1	ARS D1. Pale light orange, slightly brown, not very granular fabric. Light orange slip, rather glossy, but not very thick. Rouletted band on top
43	Hayes 71, <i>similis</i>	1	ARS D1. Very thin fabric, but very granular for its thinness. Pale brownish orange slip, somewhat thick and lustrous on the inside, but not so much on the outside of the lip. Most of the exterior is merely smoothed, but it has a rough texture
44–54	Hayes 73	11	ARS D1
55–59	Hayes 73, <i>similis</i>	5	ARS D1. 55: Very thin projection on the underside, resulting in a shape that would appear broken, but that is not 56–58: Underside not projected and rounder than normal (perhaps resembling some Hayes 104 rims) 59: ARS D1. Rim has no underside projection, like Hayes 95. A groove on the underside, near the lip, gives the idea of a subtle projection, bringing it closer to Hayes 73. Very small diameter
60	Hayes 76	1	ARS D1
61–64	Hayes 80A	4	ARS D1. 61: Broken lip. Fine fabric, close in texture to ARS C3 and C4, slightly more granular 62–63: Normal granular fifth century D1 fabric, slightly coarser than Hayes 73. Three grooves below rim, on the outside 64: Rim much damaged. Coarser D1 fabric
65–66	Hayes 80B	2	ARS D1. Externally thickened rim 65: Finer fabric. 66: Coarser fabric
67–68	Hayes 81A	2	Coarser ARS D1
69–72	Hayes 80B/81B	4	67: Outer feather-rouletting within a recess of the wall 69–70: Coarser ARS D1. 71–72: Finer ARS D1
73	Hayes 82	1	Wall. ARS C5. Four grooves on inside, feather-rouletting on outside
74	Hayes 84	1	Base with short ring foot. ARS C5
75	Hayes 86	1	ARS D2? Light orange fabric, almost beige, very coarse. Brownish red to reddish brown slip, very glossy and quite thick on the inside, but not so much on the outside of the rim
76	Hayes 87A1	1	ARS D2. Greyish brown appearance, most probably due to burning. Horizontal burnished bands on inside (not drawn)
77	Hayes 87A2	1	ARS D2
78	Hayes 87B	1	ARS D2? Horizontal burnished bands on inside (not drawn)
79–82	Hayes 87A/88	4	79 and 82: ARS D1. 80–81: ARS D2. 82: Damaged lip
83	Hayes 87/109	1	ARS D2. Polishing marks on the inside

(Continued on next page)

Table 5. Fifth and sixth century ARS forms and decorated fragments from Horta da Misericórdia (Continued)

No.	Form	MNV	Production and additional comments
84	Hayes 89B	1	ARS C4 or C5? Orange fabric, granular, but very compact, with regular and splintery fractures. Light orange slip, rather glossy and fairly thick, on the inside and most of the rim
85–96	Hayes 91A/B	12	87 and 89–93: ARS D1. 85–86, 88, and 94–96: ARS D2
97–100	Hayes 91B, late	4	95: Broken rim 98–100: ARS D2. 97: ARS D2?
101–106	Hayes 91B, late, or Hayes 91C	4 (plus 2 frags)	98 and 99 may be the same vessel Flanges, with or without portions of rim and wall 103: ARS D1. 101–102, 104–106: ARS D2 101–102, 105–106: Thickened lips on underside 105 and 106 were not counted as vessels, only as fragments, as they are only flanges
107–109	Hayes 91C	3	ARS D2
110	Hayes 91, small variant	1	ARS D1? Rim and wall much damaged. Very curved flange. Pale light orange fabric, almost beige, not that granular, compact. Dark orangey brown slip, glossy, somewhat thick, with polishing marks
111	Hayes 91, big diameter	1	Flange. ARS D1. Three horizontal grooves on the upside, near the lip
112	Hayes 91.29?	1	Flange. ARS D1. Groove on the upside, near the lip
113	Hayes 93A/B	1	ARS D2? Pale light orange fabric, very granular. Pale orange slip, without much gloss, thick on the upper side, but not on the underside. Lip thickened on the underside, like Hayes 93B, but rest of the rim narrower, like Hayes 93A. Rim diameter: <i>c</i> 28 cm
114–115	Hayes 94B	2	ARS D1. Thin, not particularly glossy slip
116	Hayes 96, <i>similis</i>	1	ARS D1? Feather-rouletting and groove on the rim, just above the wall. Pale orange fabric, somewhat granular, slightly laminar in one of the fractures. Rather pinkish orange slip, mostly pale, with some lustre only on the rouletted area. Broken lip
117–118	Hayes 98B	2	117: ARS D2 (?). 118: ARS D1? The slip of 117 is glossy, but not so thick, while that of 118 is thin, with little gloss. Some slip on outer wall of 117, well below the rim, but none just below the rim. 118 has clay lumps on the edge between rim and wall
119–127	Hayes 99A	9	ARS D2, at least mostly. 121: ARS D1? Glossy and mottled slip, but not very thick.
128–130	Hayes 99B	3	130: ARS D2? Pale light orange slip that does not seem too thick, but that shines in some areas. Most have a granular, but compact fabric, as with 119–121, 123–126 and 128–129; sometimes the fabric is quite fine, as with 124 and 128
131	Hayes 101	1	ARS D1? Not very thick slip, even though glossy and heterogeneous, thicker on the inside of the rim. Outer surface merely smoothed, rough to the touch
132	Hayes 103A	1	ARS D1? Dark orange fabric, slightly reddish, a little more brownish, quite granular, but compact. Pale light orange slip, not quite thick, with little gloss, showing more lustre in some areas than in others. Underside of the rim a bit broken
133	Hayes 103A/B (closer to A?)	1	ARS D2? Pale light orange, granular, but compact fabric. Deep orange slip, a bit brownish, thick and glossy. Underside of the rim broken
134	Hayes 103A/B (closer to B)	1	ARS D1? Granular, dark reddish orange fabric, with a tint of brown. Not very glossy slip, with some lustre, brick-red brown, more brown and glossy on the outer surface of the rim
135–141	Hayes 104A1	7	ARS D2. 136, 137, 139, 140, 142, 143, 145, 146, 147, 152, and 155: Lighter orange slip. 135, 144, and 151: Darker orange slip. 138, 141, 148, 149, 153, and 154:
142–143	Hayes 104A1/2	2	Reddish or brownish darker slip
144–149	Hayes 104A2	6	
150	Hayes 104A3, small variant?	1	135: May it be Hayes 76?
151–155	Hayes 104B	5	150: ARS D1. Not much granular pinkish orange fabric, very hard, with regular fractures. Deep orange slip inside, glossy, not very thick. Outside, it is orangey brown, a little less glossy, only on rim
156–157	Hayes 12/102	2	ARS D2
158	Hayes 12/110	1	ARS D2. Broken lip
159	Fulford 27	1	Wall and base with low ring foot. ARS D1? Quite granular, pale orange fabric. Pale brownish dark orange slip, with some lustre, neither thick nor thin. Outer surface merely smoothed, rough to the touch. Feather-rouletting on outside
160–166	Fulford 50	7	162, 164–165: ARS D2. 160–161, 163, 166: ARS D2? Doubts are related to the lack of thickness (161, 163) or gloss (160, 166) of the slips, which, in some cases, could have been thicker or glossier. 161 seems to be a dish, but not Hayes 58B. 166 has an upturned rim

(Continued on next page)

Table 5. Fifth and sixth century ARS forms and decorated fragments from Horta da Misericórdia (Continued)

No.	Form	MNV	Production and additional comments
167–171	Stamped bases (fifth and sixth centuries)	5 frags	Mostly ARS D1 168 and 171: ARS D2
172	Base with burnished decoration – Bonifay Group 1B	1 frag	ARS D1 Very thin slip inside, if any. Concentric burnished bands, glossy, deep orange
173–177	Bases with false feet (Hayes 67)	5 frags	ARS D1
178–180	Bases with false feet (Hayes 67/71)	3 frags	ARS D1
181	Base with false foot (Hayes 67/71 or 91C?)	1 frag	ARS D1
182–188	Wall/base fragments with feather-rouletting (Hayes 91)	7 frags	Mostly ARS D1 Two fragments (184 and 187) are ARS D2
189–194	Bases with ring feet and feather-rouletting (Hayes 91)	6 frags	ARS D1 194 is a large base with triangular foot, with rather good D1 fabric and slip
195–196	Bases with ring feet (Hayes 99?)	2 frags	195: ARS D2, with dark orange slip, thick and glossy 196: Only the ring foot survived. Slip very poorly preserved, with just a little gloss
197	Base with ring foot and ‘triple groove’ (Hayes 103–104)	1 frag	ARS D2. Foot broken on lip. It has a greyish tint, most probably due to burning. There seems to be an incised squared pattern inside that did not damage the slip.
198–207	Other ring feet	10 frags	Mostly ARS D1. Rectangular (202–205), trapezoidal (198, 201) and triangular (199–200, 206–207) feet. 202 and 207 are broken. 199 has a thick and glossy slip all over its surface, but its medium-sized triangular foot does not seem to belong within ARS A or ARS A/D
208	Small handle	1	ARS D1. Three vertical grooves on the outside. Granular, but compact fabric. Light orange slip, thin, on the outside. The inside has no slip and it is not very well polished

smaller quantities than ARS. As in all assemblages from the Iberian Peninsula, Hayes 3 is the dominant form, but a rare example of Hayes 8 is also present; in modern Portugal, this form had so far only been identified in Santarém (Viegas 2003, 204), Mértola (Delgado 1988, 45; 1992, 127, no. 11, 129–30) and Balsa (Luz de Tavira, Tavira) (Viegas 2011, 338), only once at each site. Table 6 summarises the range of fifth and sixth century LRC forms and decorated fragments from Horta da Misericórdia, as well as their quantities. Drawings of these LRC vessels are presented in Fig. 6.

5. Import patterns of fifth and sixth century African Red Slip and Late Roman C wares in *Ossonoba*: a new perception after the assemblage from Horta da Misericórdia

As we have seen, the amounts of fifth and sixth century ARS and LRC are much greater in the assemblage from Horta da Misericórdia than in the two assemblages studied by Viegas. Hence, these new quantitative data are important to complement the current perspective on the importation of Late Antique pottery to *Ossonoba*/Faro. At the same time, we should not exclude from this analysis the fourth century ARS imports that continued into the early fifth century, precisely because they are also part of this continuous phenomenon. Since the assemblage from

Horta da Misericórdia has a far greater percentage of fifth and sixth century ARS forms than any other pottery collection from Faro published to date, I shall treat it here as a reference sample of the Late Antique fine ware trade to *Ossonoba*. Regardless of this methodological option, which I believe is justified by the uniqueness of this assemblage, we must keep in mind that different areas of a site may yield quite dissimilar pottery assemblages, depending on the nature of the occupation of each particular area. Faro is actually a good example of this, for we have seen that the excavations at the Municipal Museum, located near Horta da Misericórdia, produced an assemblage in which Late Vandal ARS forms are quite infrequent (*cf* Viegas 2011, 158, table 15).

It is important to remember that, as stratigraphic dating is not available in the case of Horta da Misericórdia, the assessment of import patterns for the fifth and sixth century ARS and LRC is based on the probability of occurrence of the various forms, following the analytical method established by Fentress and Perkins (1988), and resorting to the chronologies established by the aforementioned chrono-typological works of reference. The results are summarised through time in a linear graph with import probabilities per decade (Fig. 7), which I believe accurately translates the chronological intervals established in the chrono-typological works mentioned above and, at the same time, allows us to better perceive

Table 6. Fifth and sixth century LRC forms and decorated fragments from Horta da Misericórdia

No.	Form	MNV	Production and additional comments
209	Hayes 3B	1	Single line of rouletting outside rim. Concave lip. Brownish/greyish outer surface
210–211	Hayes 3C	2	210: Single short line of rouletting outside rim. External surface completely carbonised. Clay lumps outside the rim
212–215	Hayes 3E	4	211: Small variety. Slip with metallic appearance on the outside of the rim 212: Metallic-looking slip on the inside, but especially on the outside of the rim 213: Small variety. External rouletting on rim, very worn 214: With thin offset. External rouletting on rim, very worn? Very thin and not much projected offset. Clay lumps outside the rim 215: With offset. Metallic-looking slip on the outside of the rim. Internal shape resembles Hayes 3.10 (Type C) and Hayes 3.13 (Type D). Underside somewhat more rolled, as in Type D
216–217	Hayes 3E/F (no offset)	2	216: Offset very worn or absent 217: Small variety
218–221	Hayes 3F	4	There are no offsets below the rims, but still Type F more than Type E 219: Three lines of deep rouletting on outer rim 220–221: Small varieties
222	Hayes 3, early small variety	1	Two fragments surely from the same vessel, but not-conjoining
223	Hayes 8	1	Larger diameter at the top edge of the rim than usual (27.4cm)
224	Rouletted base with ring foot (Group IIA)	1 frag	Somewhat coarser fabric than usual
225–233	Other bases with ring feet	9 frags	

whether commercial trends could have any connection to historical events. Nevertheless, in the context of the peer review of this article, it was suggested that a linear graph with import probabilities per quarter century could better mirror the chrono-typological reality and so avoid any tendency to read into the detail of a 10-year interval graph too much ‘definitive fact’ (in other words, prevent the tendency to over-interpretation, by reading the graphs too literally). Even if I think that a graph with import probabilities per decade is perfectly capable of reflecting the chronologies established by the abovementioned chrono-typological studies, and also that a chart with import probabilities per quarter century makes it more difficult to associate trends to historical events, I tend to agree that the latter may be useful to help better understand the general tendencies of trade. Therefore, I chose to present here a linear graph with 10-year intervals (Fig. 7) and another one with 25-year intervals (Fig. 8), as I believe it might be useful to compare both perspectives. Still, because I also think that the graph with import probabilities per decade allows us to perceive more accurately the possible connections between commercial trends and historical events and, at the same time, is able to mirror the chrono-typological reality with precision, I shall use it as the main source for the section that will deal with the socio-economical interpretation of said trends.

Starting with ARS, it is precisely during the early fifth century that the numbers per decade are higher, due to the contribution of well-represented forms continuing from the previous century, the most important of them being Hayes 59. Quantities in this period are reinforced by the importation of the Hayes 61A/B variants. Around

AD 420, the amounts of ARS drop considerably, as the abovementioned fourth century forms ceased to be produced and the various forms introduced from that date until the end of the fifth century did not compensate, in terms of quantity, the loss of the more ancient forms. In the 10-year interval chart, a huge peak in the AD 440s is most probably caused by the overlap of the ending and beginning of the production of fifteen forms, according to the chrono-typological references used in this paper. Therefore, this peak should not be considered in the present analysis, and the period from *c* AD 420 to *c* AD 480 is to be deemed one of recession for the ARS importation in *Ossonoba*.

A second apex of ARS imports, visibly lower than that of the early fifth century, was reached *c* AD 480–520. In the 10-year interval graph, a slight peak in the AD 480s is most likely due to the ending and beginning of the production of twelve forms. This makes me believe that the import probabilities from *c* AD 480 to *c* AD 520 are in fact quite constant. The dates of *c* AD 480–520 may be approximate, because I considered that when forms are dated to the ‘beginning’ and the ‘end’ of a century, this corresponds to the two first or two last decades, respectively. A different interpretation could translate these terms into an interval of *c* AD 470–530 or *c* AD 475–525 without raising many doubts. This reflection is meaningful because of the end date for the last ARS import peak, *c* AD 520/530, which is important for reasons to be seen below. Anyhow, it is clear from both graphs that the second quarter of the sixth century is already a time of increasing recession, even though ARS quantities are still considerable, roughly at the same



Figure 4. Fifth and sixth century ARS from Horta da Misericórdia (1–67).

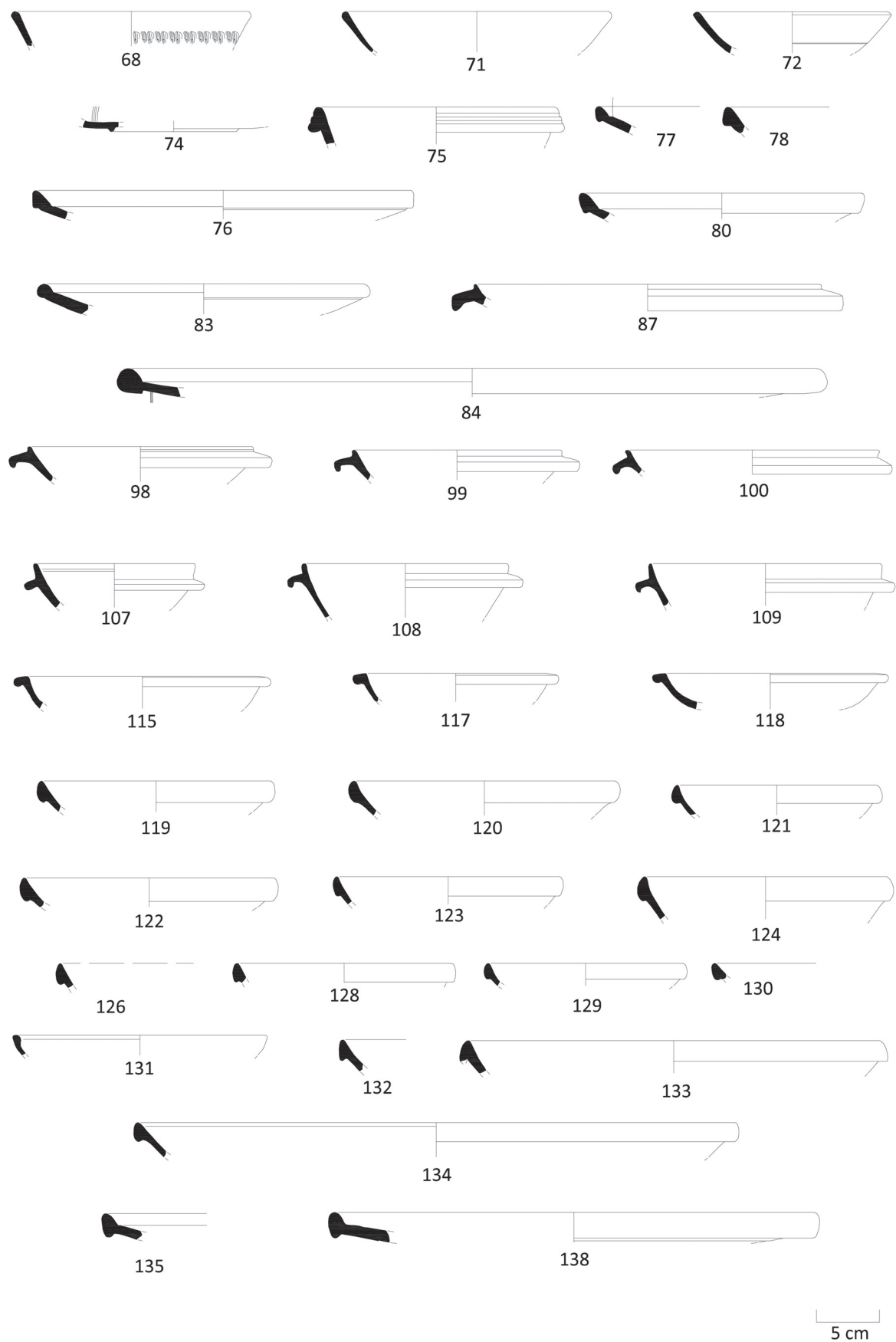


Figure 5. Fifth and sixth century ARS from Horta da Misericórdia (68–138).

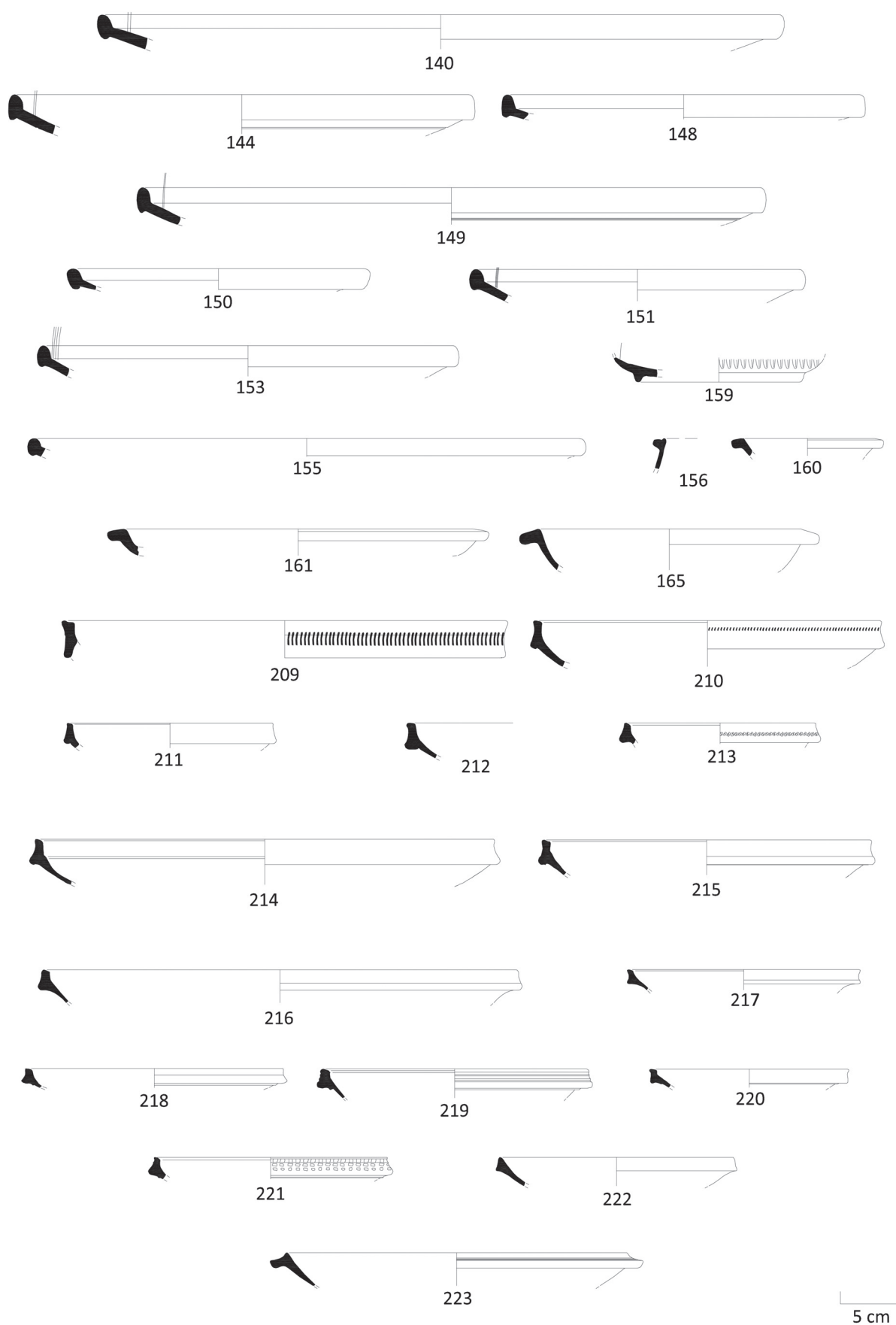


Figure 6. Fifth and sixth century ARS (140–165) and LRC (209–223) from Horta da Misericórdia.

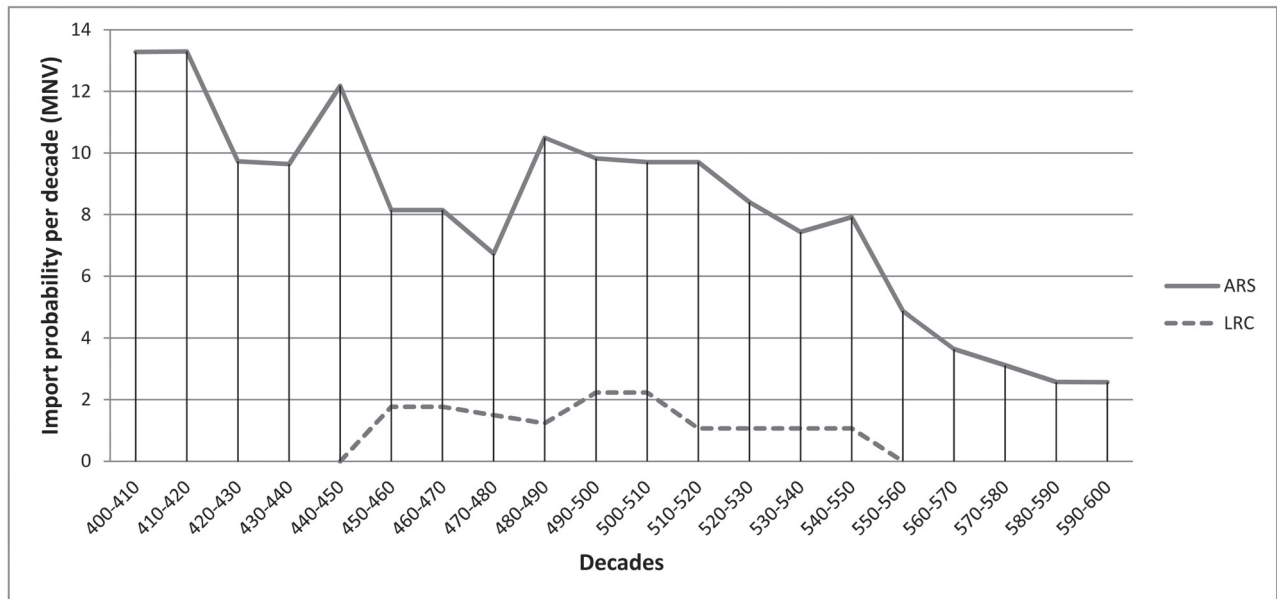


Figure 7. Fifth and sixth century ARS and LRC from Horta da Misericórdia: import probabilities per decade

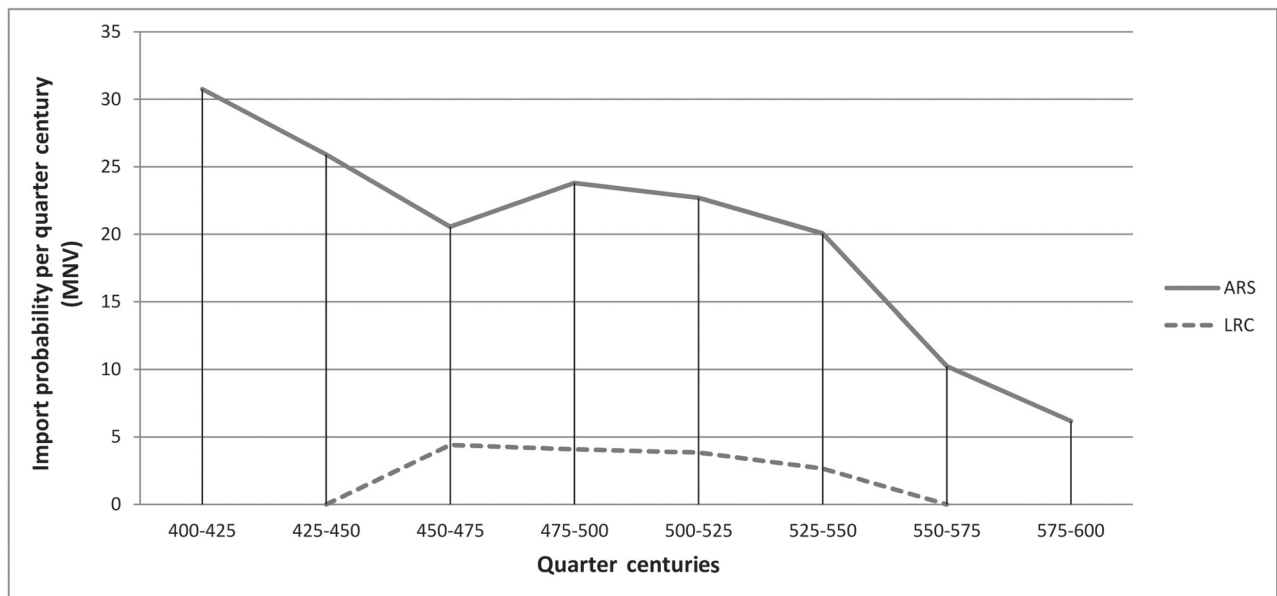


Figure 8. Fifth and sixth century ARS and LRC from Horta da Misericórdia: import probabilities per quarter century.

level as during the third quarter of the fifth century. With regard to the 10-year interval graph, it seems certain that the very small peak in the AD 540s is not due to the end and beginning of the production of several forms, because only four ARS forms present at Horta da Misericórdia begin or cease to be made in this decade. Coincidentally, the exact same number is valid for the AD 550s, which is one of obvious recession. In the same way that the 10-year interval chart displays a decrease of 41.18% in the ARS amounts between the AD 520s and 550s, the 25-year interval graph visibly shows a drop of approximately 50% in the ARS quantities from *c* AD 525–550 to *c* AD 550–575. It is around AD 550 that, according to both

charts, ARS imports fall to their lowest record since *c* AD 400, never to recover again.

As for LRC, the panorama is quite different. The numbers are not only far lower than those of ARS, but they also remain relatively constant throughout the decades. In *Ossonoba*, the imports began *c* AD 450, reaching their peak *c* AD 490–510, and in terms of quantities they differ very little from the other periods in which LRC is present (*c* AD 450–490 and *c* AD 510–550).

The end of the importation of LRC is a matter that requires some thought. The most recent form that I identified in the assemblage from Horta da Misericórdia is Hayes 3F, dated to the first half of the sixth century

(see Hayes 1972, 338). Type 3G, however, is absent from this assemblage. Together with Type F, it is considered a standard shape in the deposits of the Athenian Agora, Athens, being dated to the second quarter of the sixth century, according to Hayes (1972, 338). Also, in Reynolds' paper on the fine wares from contexts dated to *c* AD 450–600 in Beirut, we may see that in the contexts where the suggested pottery chronology is the second quarter of the sixth century or AD 551 (BEY 006 11081, BEY 006 20201/20202, BEY 006 2528 and 2483, and BEY 006 20216 and 20239), Types F and G, or intermediate forms between both, are always present together (Reynolds 2011, 215, 218–9, 227–8).

In the sixth century contexts of the Triconch Palace in Butrint (Albania), Reynolds also found Types F and G together. Their proportions, however, differ from one context to another. In context 1152, Hayes 3F is predominant, while Hayes 3G is the most common type in contexts 1523 and 1676, both of which yielded a distinct set of amphorae and fine wares ascribable to a later chronology (Reynolds 2004, 228). Based on this information, because of the predominance of Type F along with the presence of Type G, Reynolds proposed that context 1152 should be dated to the second quarter of the sixth century. He also suggested a chronology of *c* AD 550–575 for the majority of the material found in context 1676, where Hayes 3G is the most common LRC form, and further identified a small set of late sixth century pottery and later in the same context, including a fragment of Hayes 10C (Reynolds 2004, 237). With all this in mind, Reynolds (2004, 243, endnote 11) proposed that Type G, whose quantities increase from context 1152 to context 1676, could be dated to *c* AD 525–575.

Regarding all that has been mentioned above, the absence of Hayes 3G in the assemblage from Horta da Misericórdia could mean that the LRC imports ceased to arrive at *Ossonoba* before the emergence of Type G, during the second quarter of the sixth century.⁶ However, the commercial dynamics in the Eastern Mediterranean might be slightly different from those in *Hispania*, for the second quarter or the mid-sixth century. Considering total numbers, Type G is often much scarcer than Type F in assemblages from both the East and the West. This is clear, for example, in the Athenian Agora (*cf* Hayes 2008, 241–2) and Vigo (Spain) (*cf* Fernández 2014, 224, graph 21). Nonetheless, in the Beirut contexts where the pottery is dated to the second quarter of the sixth century or AD 551, Type G is often tied with Type F, sometimes being slightly more frequent (*cf* Reynolds 2011, 227–8). In Vigo, however, Hayes 3F seems to surpass Hayes 3G, by little or by far, in every analyzed context where they coexist (*cf* Fernández 2014, 79–80, 81; fig. 54; 82, fig. 55; 85–9; 90, fig. 59; 93–6; 97, fig. 63; 98, fig. 64; 100–2; 104, fig. 68; 111–3). Furthermore, some Vigo contexts dated to the second quarter or the mid-sixth century only yielded Hayes 3F (*cf* Fernández 2014, 45–7, 52–4), clearly

showing that, in the Iberian Peninsula, Type F may exist without Type G in that period. Therefore, with these Vigo contexts as an example, I believe that the final date for the acquisition of form Hayes 3F in *Ossonoba* may well be *c* AD 550.

As we have seen in the paragraphs above, the irreversible downward trend of ARS imports in the assemblage from Horta da Misericórdia starts *c* AD 520/530 and becomes stronger by *c* AD 550. In parallel, LRC imports do not go beyond *c* AD 550. This pattern of importation lasted longer than those observed at the Oceanus Mosaic and the Municipal Museum sites, bringing *Ossonoba* into the small group of southern Lusitanian settlements that imported Late Antique Mediterranean tableware for a longer time span. Only two other sites in this region present similar trends: the cities of *Balsa* (Luz de Tavira, Tavira, Portugal) (see Viegas 2011, 333, table 38, for ARS D; 338, table 39, for LRC) and *Myrtilis* (Mértola, Portugal) (see Fernandes 2012, 102; 103–6, table 11). The *villae* of Milreu (Estoi, Faro, Portugal) and Cerro da Vila (Quarteira, Loulé, Portugal) also have sixth century ARS and LRC forms, but there are not enough published vessels to establish reliable trade patterns in those cases (for Milreu see Teichner 2008, 45, 63–4, 92–3; Tafel 129, F93–F94, F113–F114 (Mi I); Tafel 143, F2–F4 (Mi XIII); Tafel 144, F3 (Mi XIV); Tafel 169, F3 (Mi XXXIV), F2, F4–F5 (Mi XXXV); for Cerro da Vila see Teichner 2008, 116, 119, 127; Tafel 190, F4 (CdV XIII); Tafel 192, F6 (CdV XVI); Tafel 200, F8–F11, F14–F16 (CdV XX)).

Regarding the trade of North African and Eastern Mediterranean fine wares in the Lower Guadiana valley during Late Antiquity, I argued that the two key dates of *c* AD 520/530 and *c* AD 550 for the decline of ARS imports and for the disappearance of LRC (only the latter date) in *Myrtilis* match well-known political events of the period: the Byzantine conquest of North Africa (AD 533–534), Italy (AD 535–555) and the south-east of the Iberian Peninsula (AD 552). I also suggested that the mechanisms of the *annona*, applied to North Africa and directed towards Byzantine *Hispania* and *Italia*, might have contributed to the strong decline and subsequent disappearance of ARS imports from the Lower Guadiana valley (Fernandes 2013, 878). Fulford and Reynolds had indeed previously argued that the *annona* may have been a disruptive mechanism that, after the Byzantine conquest, caused African food surpluses to be exported not only to Constantinople (Fulford 1984b, 262), but also to the newly-conquered western Byzantine provinces, in order to support the army and the administration (Reynolds 1995, 119).

Nevertheless, this process of disruption of commercial links after the Byzantine advance to the West, being clearly felt in southern *Lusitania*, did not equally affect the different regions of *Hispania*. Reynolds (2015, 185) has recently argued that with the conquest of the Balearic Islands by the Byzantines, in AD 534, this

archipelago became central in the process of redistributing products coming from Carthage across the ports of eastern *Hispania*. It is quite evident that this shift of power in the Balearics did not affect North African trade to that region of the Iberian Peninsula. Several eastern Hispanic coastal settlements imported great quantities of ARS during the first half of the sixth century, with virtually no change in trends from the Late Vandal to the Early Byzantine period (Reynolds 2010, 103–4). LRC was exported in larger amounts to south-eastern, southern and western *Hispania* (Reynolds 2010, 117, map 12), with Reynolds (2010, 117–8 – for Benalúa-Alicante and *Baelo Claudia*; 2015, 187 – for Vigo) stating that its quantities are much higher in Benalúa-Alicante (Spain), *Baelo Claudia* (Bolonía, Tarifa, Spain) and Vigo.⁷ Even after the Byzantine conquest of south-eastern *Hispania* in AD 552, North African and Eastern Mediterranean products would be present in a few non-Byzantine settlements in the eastern Iberian Peninsula, such as Garganes-Altea (Alicante, Spain), Cullera, Liria, Valencia la Vella, Valencia (all in the territory of Valencia, Spain), Tolmo de Minateda (Hellín, Albacete, Spain) and Tarragona (Spain) (Reynolds 2015, 187–91).⁸

In southern *Lusitania*, however, the two falls in ARS numbers *c* AD 520/530 and *c* AD 550 and the absence of LRC after *c* AD 550 are clearly visible in the few sites where these fine wares were still being imported. Given the mid- and late sixth century finds from Vigo (see Fernández 2014, 45–7, 52–4, 56–7, 59–62, 79–113), we cannot say that the Atlantic trade routes were shutting down in the second quarter and mid-sixth century. Why urban settlements like *Myrtilis*, *Balsa* and *Ossonoba* stopped receiving significant quantities of North African and Eastern Mediterranean fine wares around the second quarter or the mid-sixth century is not easy to understand. That this might have been due to an endogenous phenomenon is somewhat hard to accept in this case. The amounts of Late Vandal ARS were high in all these three cities, and contemporary LRC was present in smaller, but still relevant quantities. *Ossonoba* had a bishop present in several Hispanic councils during the late sixth and seventh centuries.⁹ *Myrtilis* had, in the second quarter of the sixth century, a resident Greek-writing community with some links to the Church.¹⁰ During the reign of the Visigothic king Theudis (r. 531–548) the diocese of *Pax Iulia* (Beja, Portugal), which would likely encompass *Myrtilis*, was governed by the bishop Apringius, whose name was most probably of Syriac origin (Fernandes and Valério 2013, 97 and footnote 75). All this seems to be evidence for the socio-economic vitality of some southern Lusitanian communities during the Visigothic period. Finally, written sources do not seem to register any political or military turmoil in southern *Lusitania*, during the second quarter and the mid-sixth century.

If there are no obvious internal reasons for the loss of access of *Myrtilis*, *Balsa* and *Ossonoba* to the Atlantic

trade routes, this trend should therefore be attributed to external factors linked to trade itself. The chronological coincidence between the irreversible decline of ARS and LRC in southern *Lusitania* and the Byzantine conquest of North Africa, Italy, the Balearic Islands and south-eastern *Hispania* suggests that the mechanism that caused this final drop must be linked to the Byzantine political and military presence in the central and western Mediterranean. I therefore tend to think that the economic effort caused by the *annona*, whether directed towards the East or the West under Byzantine rule, played a crucial role in the end of the importation of North African and Eastern Mediterranean fine wares and other products to southern *Lusitania* – a region which after the collapse of the mining and fish salting industries possibly had too few commercial counterparts to offer.

Nevertheless, it is worth mentioning the presence of a few ARS specimens in *Myrtilis* (Hayes 91, var. *Atlante I*, XLIX, 10, Hayes 105A, var., and Hayes 107; see Fernandes 2012, 104–5, table 11), *Balsa* (Hayes 87/109, Hayes 90B2, Hayes 105 and Hayes 109; see Viegas 2011, 333, table 38, 334) and *Ossonoba* (Hayes 87/109 and Hayes 104A3, small variant?; see Table 5 in this paper) that are dated to the second half of the sixth century, or even to the early seventh century. Such vessels may be evidence of a small-scale trade in southern *Lusitania* that would possibly be connected to the later ARS supply to Vigo, though this is difficult to say with complete certainty at this point.

6. Conclusions

The analysis of the fifth and sixth century ARS and LRC from Horta da Misericórdia gives us a new perspective on the Late Antique imports to *Ossonoba*. It is now clear that ARS continued to be acquired in significant numbers until the mid-sixth century. After a peak in the beginning of the fifth century, its presence decreases throughout the period between *c* AD 420 and *c* AD 480. A new, though lower apex is reached *c* AD 480–520/530, being followed by an irreversible downward trend that intensifies *c* AD 550. LRC is imported from the mid-fifth to the mid-sixth century and, despite a slight peak *c* AD 490–510, its import probability is very constant during this whole period.

In her key study of Roman and Late Antique fine wares and amphorae from *Ossonoba*, Viegas had already noticed the existence of some later tableware fragments whose form and decoration suggested a sixth century date (Viegas 2011, 164, 169). Nevertheless, the assemblages that she studied clearly do not have as much late ARS and LRC as that of Horta da Misericórdia, most probably because different areas within *Ossonoba* had different rhythms of consumption and discard of tableware.

By demonstrating that the quantities of fifth and sixth century ARS and LRC vessels are considerably greater

than those of the two assemblages previously studied, the material from Horta da Misericórdia adds relevant new information to the broader, more comprehensive trade patterns identified by Viegas for *Ossonoba* during the Roman period and Late Antiquity.

Acknowledgements

I am most grateful to Mariana Almeida, MA (IAP, Universidade Nova de Lisboa; IHC, Universidade Nova de Lisboa), who produced all the drawings and the maps of the Iberian Peninsula presented in this article and in the poster that preceded it, adapted the map of Faro presented in this paper, assisted me with the layout of the poster, and greatly contributed to improve this study. I would like to express my gratitude to Dr João Pedro Bernardes (Universidade do Algarve; CEAACP, Universidade de Coimbra), who kindly and selflessly allowed me to study the fine ware assemblage from Horta da Misericórdia for my doctoral thesis, this paper, and the poster that gave rise to it. I am thankful to Cristina Dores, BA (Universidade do Algarve), who assisted me with logistical aspects related to the pottery analysis. My appreciation goes to Joana Gonçalves, MA (IAP, Universidade Nova de Lisboa), who helped me with the scans of the general plan of the excavations at Horta da Misericórdia. I am most grateful to Dr Miguel Valério (Universitat de Barcelona), who made valuable suggestions to improve the style of this article and of the poster that originated it. I am thankful to Dr Michel Bonifay (Centre Camille Jullian, Aix-Marseille Université), who revised a number of my formal classifications of the drawn ARS fragments. I would also like to express my gratitude to my PhD supervisors, Dr Paul Reynolds and Dr Catarina Viegas, who made valuable suggestions to strengthen this paper both in style and content. Finally, my appreciation goes to the two anonymous reviewers, whose comments contributed to the improvement of this article. The responsibility for all views, errors and shortcomings remains my own.

Notes

1. The work for this paper arose as part of my archaeological studies on the doctoral programme 'Societat i Cultura' of the Universitat de Barcelona. IAP, Universidade Nova de Lisboa. CHAM, Universidade Nova de Lisboa and Universidade dos Açores. The research presented in this paper is part of my ongoing PhD project, 'North African and Eastern Mediterranean trade in Southern Lusitania (4th–6th/7th centuries AD): the fine-ware evidence', under the supervision of Dr Paul Reynolds (Universitat de Barcelona; Institució Catalana de Recerca i Estudis Avançats) and Dr Catarina Viegas (Universidade de Lisboa; UNIARQ, Universidade de Lisboa). This PhD project is funded by a doctoral research grant (SFRH/BD/85315/2012) provided by national funds of the Fundação para a Ciência e Tecnologia (Ministério da Ciência, Tecnologia e Ensino Superior, Governo da República Portuguesa). This particular study was originally presented as a poster at the 30th Congress of the *Rei Cretariae Romanae Fautores* (Lisbon, Portugal, 25th September–2nd October 2016). However, I was not able to submit the corresponding paper in time to be published in the *Rei Cretariae Romanae Fautorum Acta*. Thanks are due to the editor of the *Journal of Roman Pottery Studies*, Dr Steve Willis (University of Kent), for having considered my paper for peer review and publication.
2. The terms 'Phocaean Red Slip Ware', suggested by Hayes (1980, lix), and '*sigillée phocéenne tardive*', advocated by Mayet and Picon (1986), both make reference to a Phocaean origin of LRC and have been increasingly favoured by archaeologists writing in various languages. However, it has been clear since the 1980s that LRC was not exclusively produced at *Phocaea*/Foça (see for example Empereur and Picon 1986), even if the Phocaean production was considered clearly predominant, particularly with regard to exported vessels (Mayet and Picon 1986, 132–3). We now know that LRC was largely produced not only at *Phocaea*, but also at Çandarlı, *Gryniön* and another unidentified site (see *LRFW* Working Group 2011a, 6). As I cannot be certain that the LRC vessels found at Horta da Misericórdia are of Phocaean origin, in the present paper I use the term 'Late Roman C Ware' and the abbreviation 'LRC'.
3. The chronology of the walls of Faro is still somewhat doubtful. Viegas (2011, 252) considers that this defensive structure determined the urbanism of the Roman city. Previously, Mantas (1993, 519–20, *apud* Viegas 2011, 251–2) had already noted that the location of the three original gates of the old town walls match the *cardo maximus* and the *decumanus maximus*, and also that, in the area of the medieval castle, the foundations of the walls are around 7m below the present ground level. Both researchers therefore believe that it is very probable that the walls of Faro have a Roman origin.
4. With regard to the morphology of pottery vessels, the word 'type' is used in this paper as a subordinate of 'form', following Hayes 1972, xxvii.
5. For a recent overview of the geographic distribution of LRC in the westernmost parts of *Hispania* see Fernández 2014, 440, fig. 225, with references.
6. This possibility came up during a conversation with Dr José Carlos Quaresma (Universidade Nova de Lisboa; IEM, Universidade Nova de Lisboa; CIDEHUS, Universidade de Évora; UNIARQ, Universidade de Lisboa), to whom I am thankful.
7. For LRC in Benalúa-Alicante see Reynolds 1987, 109–21. For LRC in *Baelo Claudia* see Bourgeois and Mayet 1991, 375–6. For LRC in Vigo see Fernández 2014, 221–62.
8. For Garganes-Altea see Moltó Poveda 2000, 529–40. For the territory of Valencia see Roselló Mesquida *et al.* 2003, 67–118; Escrivà Torres *et al.* 2005, 267–78; and Roselló Mesquida 2005, 279–304, with references. For Tolmo de Minateda see Gutiérrez Lloret *et al.* 2003, 119–68. For Tarragona see Macías i Solé 1999; and Remolà Vallverdu 2000.
9. The bishops of *Ossonoba* or their representatives participated in the third (AD 589), thirteenth (AD 683), fifteenth (AD 688) and sixteenth (AD 693) Councils of

Toledo, and in the Council of Mérida (AD 666) (see Vives 1963, 136, 343, 432, 474, 521).

10. For the Greek epigraphic corpus from Myrtilis/Mértola see Dias *et al.* 2001, 27–32, 40–7. For a recent approach to the Greek-writing communities in sixth century Visigothic Lusitania, including that of Myrtilis, see Fernandes and Valério 2013.

Bibliography

- Arcelin, P. and Tuffreau-Libre, M. (eds) 1998. *La quantification des céramiques. Conditions et protocole. Actes de la table ronde du Centre Archéologique Européen du Mont Beuvray (Glux-en-Glenne, 7–9 avril 1998)*, Bibracte, 2, Glux-en-Glenne.
- Bonifay, M. 2004. *Études sur la céramique romaine tardive d'Afrique*, BAR International Series 1301, Oxford.
- Bourgeois, A. and Mayet, F. 1991. *Belo VI: Les sigillées – Fouilles de Belo*, Collection de la Casa de Velázquez, 34, Madrid.
- Carandini, A. (coord.) 1981. *Atlante delle forme ceramiche, I. Ceramica fine romano nel bacino mediterraneo (medio e tardo impero)*, *Enciclopedia dell'arte antica classica e orientale*, Roma.
- Delgado, M. 1988. Contribuição para o estudo das cerâmicas romanas tardias do Médio Oriente en-contrada sem Portugal, *Cadernos de Arqueologia*, série II, 5, 35–49.
- Delgado, M. 1992. Cerâmicas romanas tardias de Mértola originárias do Médio Oriente, *Arqueologia Medieval*, I, 125–33.
- Dias, M.M.A., Gaspar, C. and Mota, B. 2001. *Inscrições Gregas, Epigrafia do território português*, II, Lisboa.
- Empereur, J.-Y. and Picon, M. 1986. À propos d'un nouvel atelier de "Late Roman C", *Figlina*, 7, 143–6.
- Escrivà Torres, V., Vidal Ferrús, X. and Martínez Camps, C. 2005. *Edeta en la antigüedat tardia* (Llíria, Valencia), in J.M. Gurt and A. Ribera (eds) *VI Reunió d'Arqueologia Cristiana Hispànica. Les ciutatstar do antigues d'Hispania: cristianització i topografia*, Barcelona, 267–78.
- Fentress, E. and Perkins, P. 1988. Counting African Red Slip Ware, in A. Mastino (ed.) *L'Africa romana. Atti del V convegno di studio. Sassari, 11–13 dicembre 1987*, Pubblicazioni del Dipartimento di Storia dell'Università di Sassari, 9, Sassari, 205–14.
- Fernandes, E.M.C.M. 2012. *Cerâmicas finas norte-africanas e mediterrânicas orientais no Baixo Guadiana (séculos V a VII)*, unpublished MA thesis in Archaeology, Faculdade de Ciências Sociais e Humanas da Universidade Nova de Lisboa. Available at <https://run.unl.pt/handle/10362/9163>.
- Fernandes, E. 2013. A desagregação do comércio mediterrânico no Baixo Guadiana tardo-antigo: análise da *terra sigillata* africana e focense tardia, in J.M. Arnaud, A. Martins and C. Neves (eds) *Arqueologia em Portugal: 150 anos*, Lisboa, 873–81.
- Fernandes, E.M.C.M. and Valério, M.F.G. 2013. Comunidades helenógrafas en la Lusitania visigoda (s. VI), *Pyrenae – Revista de Prehistòria i Antiguitat de la Mediterrània Occidental*, 44.2, 69–108.
- Fernández, A. 2014. *El comercio tardoantiguo (ss. IV–VII) en el Noroeste peninsular a través del registro cerámico de la ría de Vigo*, Roman and Late Antique Mediterranean Pottery, 5, Oxford.
- Fulford, M.G. 1984a. The red-slipped wares, in M.G. Fulford and D.P.S. Peacock *Excavations at Carthage: the British Mission. Volume 1, 2. The Avenue du Président Habib Bourguiba, Salammbô: the pottery and other ceramic objects from the site*, Sheffield, 48–115.
- Fulford, M.G. 1984b. The long distance trade and communications of Carthage, c. A.D. 400 to c. A.D. 650, in M.G. Fulford and D.P.S. Peacock *Excavations at Carthage: the British Mission. Volume 1, 2. The Avenue du Président Habib Bourguiba, Salammbô: the pottery and other ceramic objects from the site*, Sheffield, 255–62.
- Gamito, T.J. 2007. *O Algarve e o Magreb (711–1249)*, Faro.
- Gutiérrez Lloret, S., Gamo Parras, B. and Amorós Ruiz, V. 2003. Los contextos cerámicos altomedievales del Tolmo de Minateda y la cerámica altomedieval en el Sudeste de la Península Ibérica, in L. Caballero, P. Mateos and M. Retuerce (eds), *Cerámicas tardorromanas y altomedievales en la Península Ibérica. Ruptura y continuidad*, Anejos del Archivo Español de Arqueología, XXVIII, Madrid, 119–68.
- Hayes, J.W. 1972. *Late Roman Pottery*, London.
- Hayes, J.W. 1980. *A Supplement to Late Roman Pottery*, London.
- Hayes, J.W. 2008. *Roman Pottery: Fine-ware imports*, The Athenian Agora. Results of excavations conducted by the American School of Classical Studies at Athens, volume XXXII, Princeton, New Jersey.
- LRFW Working Group 2011a. An initiative for the revision of late Roman fine wares in the Mediterranean (c. AD 200–700): The Barcelona ICREA/ESF Workshop, (text by M.A. Cau, P. Reynolds and M. Bonifay), in M.A. Cau, P. Reynolds, and M. Bonifay, (eds) *LRFW 1. Late Roman Fine Wares. Solving problems of typology and chronology – A review of the evidence, debate and new contexts*, Roman and Late Antique Mediterranean Pottery, 1, Oxford, 1–13.
- LRFW Working Group 2011b. Key contexts for the dating of late Roman Mediterranean fine wares: a preliminary review and 'seriation' (text by P. Reynolds, M. Bonifay and M.A. Cau), in M.A. Cau, P. Reynolds and M. Bonifay (eds) *LRFW 1. Late Roman Fine Wares. Solving problems of typology and chronology – A review of the evidence, debate and new contexts*, Roman and Late Antique Mediterranean Pottery, 1, Oxford, 15–32.
- Macías i Solé, J.M. 1999. *La ceràmica comuna tardo antiga a Tàrraco: anàlisi tipològica i històrica (segles V–VIII)*, col. TULCIS, Monografies Tarraconenses, 1, Tarragona.
- Mantas, V.G. 1993. A cidade luso-romana de *Ossonoba*, in J.F. Rodríguez Neila (coord.) *Actas del I Coloquio de Historia Antigua de Andalucía. Córdoba 1988*, volume 1, Córdoba, 515–37.
- Mayet, F. and Picon, M. 1986. Une sigillée phocéenne tardive ("Late Roman C ware") et sa diffusion en Occident, *Figlina*, 7, 129–42.
- Moltó Poveda, F.J. 2000. Cerámicas de importación del yacimiento tardorromano de Garganes, in J.M. Gurt and N. Tena (eds), *V Reunió d'Arqueologia Cristiana Hispànica*, Barcelona.
- Remolà Vallverdu, J.A. 2000. *Las ánforas tardo-antiguas en Tarraco (Hispania Tarraconensis): siglos IV–VII d.C.*, col. Instrumenta, 7, Barcelona.
- Reynolds, P. 1987. *El yacimiento tardorromano de Lucentum (Benalúa-Alicante): las cerámicas finas*, Catálogo de Fondos del Museo Arqueológico Provincial, II, Alicante.

- Reynolds, P. 1995. *Trade in the Western Mediterranean, AD 400–700: The ceramic evidence*, BAR International Series 604, Oxford.
- Reynolds, P. 2004. The Roman pottery from the Triconch Palace, in R. Hodges, W. Bowden and K. Lako *Byzantine Butrint. Excavations and Surveys 1994–99*, Oxford, 224–69.
- Reynolds, P. 2010. *Hispania and the Roman Mediterranean, AD 100–700. Ceramics and Trade*, London.
- Reynolds, P. 2011. Fine wares from Beirut contexts, c. 450 to c. 600, in M.A. Cau, P. Reynolds and M. Bonifay (eds) *LRFW 1. Late Roman Fine Wares. Solving problems of typology and chronology – A review of the evidence, debate and new contexts*, Oxford, 207–30.
- Reynolds, P. 2015. Material culture and the economy in the age of Saint Isidore of Seville (6th and 7th centuries), *Antiquité Tardive*, 23, 163–210.
- Roselló Mesquida, M. 2005. El *territorium* de *Valentia* a l'antiguitat tardana, in J.M. Gurt and A. Ribera (eds) *VI Reunió d'Arqueologia Cristiana Hispànica. Les ciutats tardoantigues d'Hispania: cristianització i topografia*, Barcelona, 279–304.
- Roselló Mesquida, M., Ribera i Lacomba, A. and Pascual Pacheco, J. 2003. Cerámicas de la ciudad de Valencia entre la época visigoda y omeya, in L. Caballero, P. Mateos and M. Retuerce (eds) *Cerámicas tardorromanas y altomedievales en la Península Ibérica. Ruptura y continuidad*, Anejos del Archivo Español de Arqueología, XXVIII, Madrid, 67–118.
- Teichner, F. 2008. *Entre tierra y mar/Zwischen Land und Meer. Architektur und Wirtschaftsweise ländlicher Siedlungsplätze im Süden der römischen Provinz Lusitanien (Portugal)*, *Studia Lusitana*, 3, 2 vols, Mérida.
- Viegas, C. 2003. *A terra sigillata da Alcáçova de Santarém. Cerâmica, economia e comércio*, *Trabalhos de Arqueologia*, 26, Lisboa.
- Viegas, C. 2011. *A ocupação romana do Algarve. Estudo do povoamento e economia do Algarve central e oriental no período romano*, *Estudos & Memórias*, 3, Lisboa.
- Vives, J. with Marín Martínez, T. and Martínez Díez, G. 1963. *Concilios visigóticos e hispano-romanos*, col. *España Cristiana*, Textos: vol. 1, Barcelona-Madrid.

A Roman Pottery Retrospective

Beth Richardson

JRPS: Can you briefly outline your career in Roman pottery studies?

Unlike some other members of the Study Group who are more or less my contemporaries I have not spent all my working life as a Roman pottery specialist. After 15 years working on Roman pottery in London I became a museum curator in the 1990s, then came back to MoLAS (now MOLA) part-time in 2000, to help with a temporary mountain of Roman pottery and, since 2004, have been a post-Roman finds specialist, although I am still occasionally given Roman pottery projects – and I certainly don't object. I have though been a Roman pottery specialist for most of my career, and still get that familiar feeling of anticipation when opening a box of promising sherds. I expect I always will!

How did you come to study Roman pottery?

I was one of the first students to do a single honours archaeology degree at Reading University and was lucky to have Richard Bradley and Mike Fulford as newly appointed lecturers in what was then a very small Department. I wrote up the Iron Age pottery from Rams Hill hillfort for my undergraduate dissertation and remember also being enthused by David Peacock and David Williams' pioneering petrological work on sourcing black-burnished wares, still the standard work. I first started working on (non-university) pottery assemblages as a student, sorting and recording the pottery from the Shadwell excavations in St Katherine's Docks.

How did you come to stay in the subject?

I was in my last term at Reading when I was offered a job as Prehistoric and Roman pottery specialist at the newly-formed Inner London Archaeological Unit. The first site assemblage I worked on in this role was from Bedfont, on the edge of Heathrow airport (not Inner London at all of course), which consisted of thousands of seemingly indistinguishable abraded sherds and nearly finished me off, but then I started working on the extraordinary late third century ditch-fill assemblage from Shadwell. It and pottery from subsequent excavations on the site is

still quite unique in London for its date and good state of preservation. After 3 or so years I moved on to join the Roman pottery team at the Museum of London's Department of Urban Archaeology (the DUA).

Who were the people who influenced you as you developed your approach to Roman pottery?

Chris Green and Clive Orton, who between them developed the DUA system of quantifying, dating and recording pottery by fabric (using microscopes and thin-sectioning) and form. The fabric common names were based on a London fabric reference collection still used today, and the form codes derived from the Southwark Roman form typology concurrently created by two other hugely influential Roman pottery specialists, Geoff Marsh and Paul Tyers. Chris, Clive and Clive's successor Alan Vince also saw the importance of creating published dated corpora of pottery classified by common name which meant that (funded by English Heritage) we were able to collate information from well-dated sites from all over the City (including earlier twentieth century groups), rather than publish on a piecemeal site by site basis.

What has been the most interesting material you have studied?

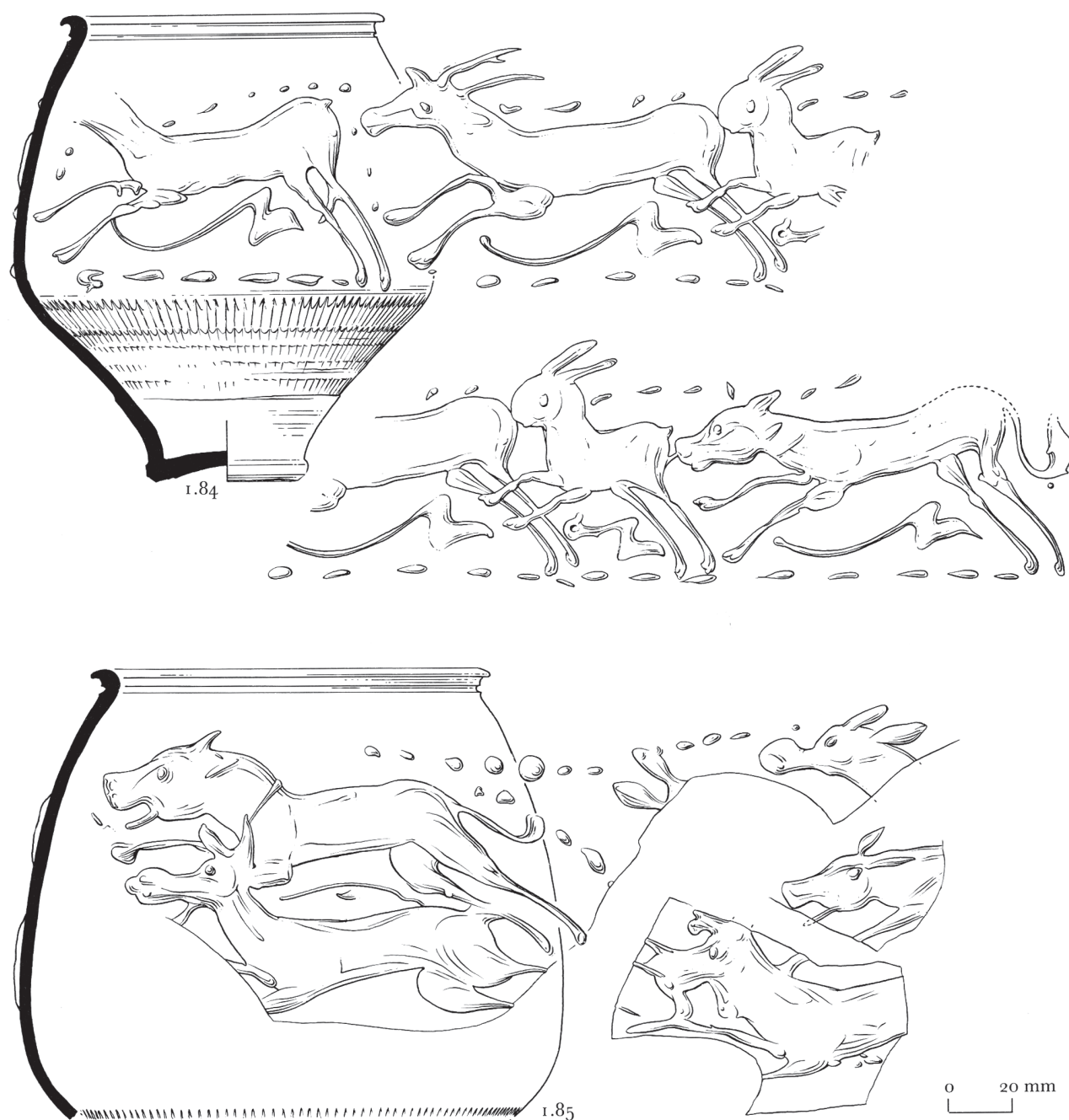
Two early sites in my career, these being Shadwell (for which I undertook the initial recording and quantification, first at the Inner London Archaeology Unit and then the DUA (see Lakin 2002 where this primary work is acknowledged)), and the huge St Magnus House late second to early third century waterfront assemblage (Miller *et al.* 1986), together with all the pottery which went into the early Roman corpus for London (Davies *et al.* 1994). These were spectacular sites and material but it can be no coincidence that in those days we had the time and money to do things like extensive (in-house) thin-sectioning programmes, draw the pottery ourselves and carry out research into (for example) North French and Rhenish imports and local shell-tempered wares. An interesting recent assemblage has been another huge group of pottery, this time pre/early Flavian from the Bloomberg

site in central London, when I had the opportunity to work on the large quantities of Sugar Loaf Court ware (London's possible legionary ware).

What have been the challenges?

Undoubtedly the pressures of commercial archaeology which have led to specialist work being under-funded and all too often under-published, in formats not useful to other Roman pottery specialists. I thought about this again recently as I re-read and used some exemplary

late twentieth century pottery reports, Wroxeter (Darling 2002), Kingsholm (Hurst 1985) and Longthorpe (Dannell and Wild 1987), the products of years of work (largely Historic Buildings and Monuments Commission-funded) by specialists who were able to carry out extensive research and draw parallels between their assemblages and those from a large number of contemporary sites in Europe and Britain – evidenced by hundreds of references and vast bibliographies. Another challenge (again because of commercial archaeology) has been for pottery specialists to be increasingly working on assemblages from parts



Chris Green's illustration of two Cologne beakers from the riverside deposits at St Magnus House, as reported upon by Beth Richardson, which appeared in Miller et al. 1986, 113, figs 1.84 and 1.85 (reproduced with the permission of Chris Green).

of the country they know little or nothing about – with very little time to try to familiarize themselves with local fabrics and reports.

What changes in the subject do you think have been particularly important?

New quantitative and statistical methods of understanding and comparing data (such as correspondence analysis) have been extremely important for Roman pottery and finds studies and are becoming routinely used by some specialists. Some of the old skills have been lost though; it is now (for commercial reasons) highly unusual for specialists to draw (or to be able to draw) their own pots; the close observation used in drawing is I think an invaluable way of seeing and understanding the sometimes subtle differences between forms, methods of construction and decoration used in different industries.

How do you envisage the future?

There is a shortage of people coming into (and staying in) Roman pottery studies but equally there have never been as many bright archaeology students and post-graduates, many (at universities like Reading), already doing finds research at a very high level. I think the future is for archaeological organizations and universities to form links and partnerships (this is already beginning to happen) and create training posts for obvious candidates, with time built in for research projects, possibly also

exchanges with European units (as we are in danger of becoming very insular). And incentives to stay too – pay progression! Too many specialists become managers within their organizations or have to leave the profession entirely, largely for financial reasons. Yet I don't want to end on a gloomy note: I have seen the huge amount of talent and application in students visiting or working with us while doing PhDs on aspects of Roman finds and building material – we just have to persuade them that Roman pottery is equally accessible and interesting and provide securely-funded jobs.

Bibliography

- Dannell, G.B. and Wild, J.P. 1987. *Longthorpe II. The military works depot*, Britannia Monograph Series, 8, London.
- Darling, M.J. 2002. The pottery, in G. Webster *The Legionary Fortress at Wroxeter. Excavations by Graham Webster 1955–1985*, English Heritage Archaeological Report 19, London, 137–204.
- Davies, B.J., Richardson, B. and Tomber, R.S. 1994. *A Dated Corpus of Early Roman Pottery from the City of London*, CBA Research Report 98, York.
- Hurst, H.R. 1985. *Kingsholm*, Cambridge.
- Lakin, D. with Seeley, F., Bird, J., Reilly, K. and Ainsley, C. 2002. *The Roman Tower at Shadwell, London: a reappraisal*, London.
- Miller, L., Schofield, J. and Rhodes, M. 1986. *The Roman Quay at St Magnus House, London. Excavations at New Fresh Wharf, Lower Thames Street, London 1974–78*, The Museum of London and the London and Middlesex Archaeological Society Special Paper, 8, London.

A Roman Pottery Retrospective

Peter Webster

JRPS: How did you come to study Roman pottery?

My first encounter with Roman pottery was in a slightly insalubrious basement in Bath, where Bill Wedlake, one-time foreman at Sir Mortimer Wheeler's excavations at Maiden Castle and founder of the Camerton Excavation Society, was sorting the pottery from the Nettleton Temple site (Wiltshire). Something must have rubbed off because a couple of years later I answered a question in the 'Roman Britain' exam in finals at Manchester either on dating or pottery or perhaps both. I shudder to think what my answer was like but it was sufficient to induce Barri Jones, with whom I was excavating at Whitchurch (Shropshire) that summer, to suggest that I wrote the pottery report. There followed a crash teach-yourself course in the pottery of the West Midlands and a topic for a research degree – Severn Valley Ware.

How did you come to stay engaged with the subject?

The truthful answer is probably 'by being semi-detached'. My admiration for those who work on Roman pottery all the time is great but it would soon drive me to drink. Fortunately, having a job as an extra-mural tutor meant that I spent a good deal of time organising courses, and teaching a wide variety of subjects on some of them, so working on pottery has always been a part-time occupation. In addition, excavation in Cardiff and area has led into work on medieval and later pottery, something which can give different perspectives. Excavation also led to work with students (both extra-mural and undergraduate) on pottery assemblages and, as most of those who have tried it know, there is nothing like teaching a subject for developing what you know about it – and for discovering what one does not know. I have always felt that the measure of a specialist is not so much what they know as what they know they do not know – shades of 'known unknowns'.

What has given you most satisfaction in your career so far?

Probably running sessions on samian for the public and leading at least some of them to the point where they can

handle the large and multi-lingual literature in order to identify makers and even write their own reports. Some came with us to work at the manufacturing site of La Graufesenque. Many have been with me for many years working on samian from Wales. When I morphed from a university lecturer to an Honorary Fellow of the National Museum they became museum volunteers.

Any advice for new starters?

Enjoy it and don't take it too seriously. Those who eat, drink and sleep pottery can be incredibly boring.

How do you envisage the future?

Every generation formulates its own questions. I have seen a generation dominated by typologies based on forms give way to one dominated by fabrics and quantification. I have also seen the passing of a generation where the director of an excavation made it his/her business to understand her/his pottery to be supplanted by those whose grasp of pottery is minimal, instead relying upon specialists who may or may not understand the excavation and who, increasingly, have found themselves operating away from the excavators. This has been a by-product of the advent of commercial archaeology and has meant that, for almost a generation, finds have been unfashionable as a pursuit and afforded a low priority in university teaching. I sense that this is changing – not least as those who came into finds in the 1960s and 1970s retire and the gap in expertise which has been threatened for several decades becomes a reality. Hopefully, we will eventually see the reintegration of excavation and finds study and be able to move forward to ask a fresh set of questions. I trust that these will move us nearer to an understanding of the people who made and used Roman pottery and away from the technicalities of pottery itself. Archaeology can be very dry if it forgets that it is, or should be, about people.

And finally?

I count myself fortunate to have spent most of a working lifetime both in a university and in Wales. Devolution has reinforced something which surely led Cyril Fox to



Sorting and recording decorated samian from the Gallicanus waste pit at La Graufesenque, c 1990. Four of the Welsh contingent in the foreground (Christine and David Rees, Robert and Wendy Hopkins), Geoff Dannell and Brenda Dickinson in the background. Photo: courtesy of Peter Webster.

think about the differences between the Highland and the Lowland Zone – a preference on the part of those to the West of Offa's Dyke to learn by the mistakes of the English. Archaeology in the Principality is much more closely knit than in England even if mutterings elsewhere about the Tafia are not always complimentary. In pottery terms this often gives one the freedom to follow policies propounded (or even enforced) elsewhere only if they seem useful.

The past as we all know is another country, but it still comes as a bit of a surprise to realise that one's own past qualifies in this category. A great deal has changed in the 50 odd years that I have been working on pottery. I never saw the Monte Testaccio created by Sheppard Frere as he 'weeded out' the pottery from his Verulamium excavations but it was of considerable size and typical of most excavations up to the 1970s. I am still trying to work out, for instance, whether the apparent lack of amphorae within the fortress at Caerleon is real or a product of the retention policy (or more properly the rejection policy) of Nash-Williams and others. The realisation that one can

do more with Roman pottery than simply date it is still not totally embedded in British archaeology.

Other things change for better or for worse. One of the first excavations I directed (at Melandra Roman fort, Derbyshire) was staffed by residents of HM Prison, Strangeways – providing me with an education denied to most, if not all, present day archaeologists but one which I am glad not to have missed. Extra-mural Departments in which I worked are now, themselves, almost a thing of the past, and with them one of the routes into both professional and amateur archaeology. In the 1980s it was possible to approach an Extra-Mural Director (as I did) and get backing for a course on samian for both amateurs and professionals in which one assembled a sizable proportion of the specialists in the field even when it was clear that to do this would mean that it had to run at a loss. 'We will do it because it is something which should be done' is no longer a valid argument. Across a long career one has seen the disposal of a good deal of bathwater, but it is hard not to regret the passing of one or two babies in the process.

Reviews

The Arverni and Roman Wine. Roman Amphorae from Late Iron Age sites in the Auvergne (Central France): Chronology, fabrics and stamps, M. Loughton, 2014, Archaeopress Roman Archaeology 2; 626 pages with B&W illustrations. ISBN 978-1-78491-042-6

Reviewed by Robin P. Symonds

(Editor's note: This publication was sent to the Journal for review by Archaeopress)

The study of Republican amphorae and their stamps – mainly the type known as Dressel 1 – requires a particular kind of sensibility. The rather select group of researchers who explore this subject are neither Roman pottery specialists nor Iron Age specialists, because the amphorae in question represent the first wave of Roman conquest, mostly unaccompanied either by soldiers or other Romans, or by other pottery types. To the Gaulish recipients, it was the wine transported in the amphorae that mattered. The military and cultural conquest of the country would not occur until the importation of these types of amphorae was already in decline. There is no doubt that *The Arverni and Roman Wine* makes a substantive and very positive contribution to this field of research.

This report, like some other recent amphora studies (notably Laubenheimer and Marlière 2010 and Laubenheimer and Schmitt 2009), is focussed specifically with the amphorae found in a fairly limited region, the Auvergne, composed of four modern French departments, Allier (03), Cantal (15), Haute Loire (43) and Puy-de-Dôme (63), although examples found in many other places enter into the discussion (as well as the data, the maps and the figures). That focus does not begin, however, until chapter 7: after a general introduction and a description of the geographical and historical setting, chapters 3 to 6 describe and illustrate the amphora types involved (Greco-Italic, Dressel 1 and other types) and the methodologies used to separate these different types. These chapters make it clear that there is a somewhat surprising lack of consensus in how the main types ought to be defined. Greco-Italic amphorae, Dressel 1A, Dressel 1A/B, Dressel 1B and Dressel 1C are all large amphorae with a long neck, two handles, a cylindrical body and a spike at the bottom. They are mainly identified by differences in the rims, although the shoulders and body-shape may also contribute.

Loughton does not begin to discuss fabrics until chapter 9, where he tells us that it was not possible to carry out any thin section analysis of sherds from his main sites, and so his analysis 'is based on a visual examination' (p 383). He identifies eleven separate fabrics (in table 35, p 384), from two or three regions: ager Cosanus, and Latium and Campania – the latter two are shown as separate but contiguous regions on the maps, but are counted together in the pie-charts. The fabrics are described, although not always in great detail. It would have been useful if the descriptions could have been accompanied by colour photographs, like those presented in Tomber and Dore 1998 (and now available online). With, accordingly, such summary detail, this volume is not a first call for those wishing to identify fabrics. The study does, however, provide a total of 30 small maps (figs 266–270) of the production regions in Italy, each accompanied by a pie-chart showing the relative proportions of wares from each region found in 30 of the 62 assemblages examined. Pie-charts are a common means of data presentation but can often be a rather misleading type of graphic representation: here, the usefulness of the comparative images must be qualified by the high percentages of vessels of unidentified origin. These range from just 13% up to 95%, but (by my calculation) unidentified types account for an average of 65% of the amphorae (being a function of the general state of knowledge of this key aspect). The actual numbers of amphorae represented by each pie-chart are not given, so that the 75% of vessels from Latium/Campania in Le Bay ditch 1077 (LTD1b/D2a) could just be fifteen sherds or vessels out of 20 in all, or 150 out of 200 (fourth map on fig. 268).

Important data are presented and the scale of the study is impressive, though there are some aspects wherein the clarity of the statistics may have been firmer. Earlier in the volume, there is a set of 60 pie-charts showing the 'Proportion of upper and lower body sherds for selective amphora assemblages' (chapter 7, figs 69–71), for a group of 60 selected assemblages, though with no total numbers or percentages listed. The total numbers (sherds, weight and MNI) for the main assemblages studied are presented in table 4 (p 89), but this list does not correspond directly with the pie-charts, while the list of assemblages shows that the numbers involved vary enormously, from just one shoulder sherd at Malintrat 'Villevaud' 4596 up to 47,062 sherds at Veyre-Monton 'Corent sanctuary' (2001–2005).

There is also a set of 192 scatter plots (chapter 7, figs 72–95) for 64 assemblages, of which 64 show ‘Rim height against inclination’, 64 show ‘Rim width against height’, and a further 64 show ‘Rim diameter against height’. With scatter plots, the reader can immediately see which have many points and which have just a few, but this reader felt that what these results might tell us about the amphora types present in these assemblages warranted more discussion. The methodology is explained in chapter 6, but mainly by way of discussing all the ways of classifying Republican amphorae, before concluding that in ‘many of the methodological schemes Greco-Italic and Dressel 1B rims are arbitrary and inconsistent with the evidence of complete vessels from Mediterranean wrecks. It has to be recognised that no techniques will ever be developed that will allow researchers to provide exact numbers of Greco-Italic, Dressel 1A, and Dressel 1B amphorae when dealing with fragmentary material. Instead, researchers will have to make do with various interpretations of the data.’ (p 88). The solution for Loughton is a combination of rim classes, median rim height and inclination values, which ‘allow assemblages of rims to be compared without recourse to the typological nomenclature’ (p 88).

Thereafter follows the massive chapter 7, pp 89–310, in which all the individual assemblages are presented. Each assemblage is catalogued with an outline of its archaeological context, descriptions of the amphorae present and their general typology, a description of other diagnostic sherds, and a summary that includes a proposed date-range. These descriptions are accompanied by drawings of all the illustratable amphorae as well as plans of the structures in which the larger assemblages were found (figs 97–246). The simple bringing together of all this material in one large chapter is a major achievement: the comparison of all the assemblages is greatly facilitated by the presentation of each one in a standardized manner, with the essentials in the text, alongside the forms. The typological illustrations can get a little repetitive, and one might begin to wonder if all the rim and shoulder and base sherds really merit inclusion, but in truth this is almost certainly the reaction of a non-specialist in Republican amphorae, and it is one that such a non-specialist might have towards many other publications devoted to the same subject. The inclusion of so many rims and other parts is undoubtedly, in measure, a defence in the face of the methodological difficulties discussed above and in the early chapters of Loughton’s book: if one is not resorting to ‘typological nomenclature’, one can at least show all the rims in question, and let the reader decide what to call them.

Chapter 8 takes the data presented in chapter 7 and compares the assemblages from the Auvergne ‘with assemblages from other parts of France, and adjacent countries’ (p 311). This section might have advantageously begun with the Auvergne assemblages presented in

the previous chapter: instead, analysis is immediately supplemented by separately-acquired data derived from a PCR, or *Projet collectif de recherche sur les mobiliers du second âge du Fer en Auvergne*, which involves a number of other sites. What the PCR brings to the work in this volume, in the first instance, is a set of nine chronological phases, from La Tène C2 (200–160 BC) to Late Augustan (10 BC–AD 15), to which a series of assemblages ‘that are from recent excavations, from negative features with limited evidence for disturbance, and contain a reasonable quantity and variety of finds’ (p 311) can be allocated. So that, at the same time that one is looking for a detailed analysis of the Auvergne material that forms the basis of this study, the analysis in fact is diluted by comparisons with sites in other regions that have not been previously described in the same structured manner as here. The objectives are relatively straightforward: the comparisons concern the relative frequency of Republican amphorae, the earliest amphorae in the Auvergne, and the general history of the importation of Republican amphorae into the Auvergne and elsewhere. This discussion is complemented with details, including complex tables, graphs, histograms and scatter plots, as well as distribution maps, though none of these is discussed separately from the general text. (By not discussing the graphic data, the author is asking the reader to do a lot of interpretive work, without being certain that he or she is seeing the data in the manner intended). There are many lists within the text of sites and contexts (mostly not in the Auvergne) that can be attributed to particular periods, also including criticism of the dating ascribed to assemblages. For example, the amphorae from Roman camps at Numantia, in Spain, are used for a set scatter plots (fig. 255) comparing them with amphorae from three Auvergne La Tène D1b assemblages, but a paragraph in the text casts doubt on the homogeneity of the Numantia assemblage (p 333). The latter part of the chapter, beginning with the heading ‘Discussion’ on page 330 and ending with ‘Summary’ at the end on page 382, is a general review of amphora diffusion in the Auvergne, Gaul and adjacent regions from La Tène C (c 250–160 BC) to the Augustan period, which includes not only sections on Dressel 1 amphorae up to the end of the Dressel 1, but also on Dressel 1C, Lamboglia 2, Brindisi amphorae, Italian Dressel 2–4 amphorae, Tarrakonensis amphorae, Pascual 1 amphorae, Baetican amphorae including Haltern 70 and Dressel 7–11, and Eastern Mediterranean amphorae including Dressel 2–4/5 and Rhodian amphorae. Likely to be of interest to many readers, it occurs to this reviewer that, perhaps from the discussion of Dressel 1C onwards, the information for the majority of these amphora types is almost by definition incomplete and is the focus of other type-specific studies that are mostly listed here in tables 27 to 34. Simply listing the sites and their dating is not really the same thing as analysis, although these tables will undoubtedly be very useful for other researchers

who are aiming to do further work. Again, this section might have remained focussed on the vessels found in the Auvergne region; looking at the dated find-spots of all these various amphora types in Europe and North Africa is bound to create something of a distraction from the main work of this book.

As mentioned above, Loughton does not begin to describe the fabrics until chapter 9, where the descriptions are accompanied by a series of maps with pie-charts aiming to show the relative quantities from each production area that were found in thirty of the most important Auvergne assemblages (figs 266–70). Here the comparisons that follow concerning the fabrics found at various sites outside the Auvergne (Northern France, South and south-western France, Eastern France, Western France, Switzerland, Spain, Portugal and England) are much more limited than in the preceding discussion of types, perhaps because the types considered include only Greco-Italic amphorae, Dressel 1 and Dressel 1C, but also because there is generally much less data to be obtained on fabrics.

This report includes some 328 stamps on Republican amphorae, and the presentation is detailed and well-illustrated. Loughton does not engage in a great deal of comparative work or try to do much quantified analysis of the stamps, but he does offer some sensible cautionary advice on the subject. When comparing the stamps from the *ager Cosanus* with those from other production areas, the former may be more numerous simply because of a greater stamping rate; many Dressel 1s from Albinia and La Parrina may appear more numerous because they were stamped at the base of both handles and could thus have been counted twice, or even three times if they were also stamped on the rim – but obviously such double or triple accounting could only occur if the vessel is quite fragmented, and perhaps found in multiple contexts, and the recording does not observe the significant cross-joins.

The last three chapters before the Conclusion are concerned with the distribution of Republican amphorae in the Auvergne region (chapter 11), the modification, reuse and deposition of amphorae in the region (chapter 12), and associated material culture (chapter 13). The distribution is mainly presented via a map (fig. 282) and a list (table 44) of some 294 find-spots of Republican amphorae in the study region. The map shows a very obvious bias, with the finds at sites alongside or near rivers, although Loughton is careful to point out that overland trade routes must also have been quite important, and although the full network of Roman roads had yet to be constructed when most Republican amphorae reached the Auvergne region, many of those later roads were superimposed on earlier existing routes: ‘... it was not possible to transport amphorae to the Auvergne without involving a sizeable land journey at some stage’ (p 422). In relation to modification and reuse

of amphorae, it has to be said that ceramics in general are quite difficult to recycle, although there is some evidence for it: Loughton quotes Peña (Peña 2007), in which three types of recycling are recognized. Amphorae in particular, however, usually represent one-way traffic aimed at getting the product, that is to say, the wine, from the wine-grower to the consumer, and the vessels, unless they were reused for storage of some other products, were usually broken into sherds that were thereafter exceedingly difficult to dispose of. So amphora sherds were used to build funerary structures, sawn up, mutilated or pierced, or made into disks or polishers or grinding tools (perhaps pestles?). Dressel 1 amphora sherds are often incredibly thick and consequently robust.

On the subject of associated material culture (chapter 13), Loughton shows that the distribution of ceramics other than amphorae and non-ceramic finds from the Mediterranean world in the Republican period does not seem to have a great deal of connection to amphora distribution during the same period. Campanian ware began to find its way into the Auvergne region before the arrival of amphorae, but it has been found only in small quantities, while imports from other sources seem to be even rarer. The discussion on this subject is both detailed and exhaustive, but the material culture in question does not seem easily connected to the contemporary wine trade.

In chapter 14, Conclusion, Loughton addresses a question that many who have confronted substantial numbers of Republican amphorae must have asked themselves (including the present writer, when dealing with amphorae from Mâlain, and other sites in Burgundy). ‘Discussions on the Republican amphora trade often fail to remember that we are dealing with a large-scale trade in alcohol’ (p 469). It seems obvious, especially if one is more accustomed to dealing with Roman ceramics from somewhat later periods, that wine from Italy was for as much as two centuries the principle point of contact between Iron Age culture and the Roman way of life. There are many other interesting aspects to Loughton’s concluding remarks, both in terms of the gradual changes over the period in question, and on the uses of wine in Iron Age life – was it part of ‘day-to-day consumption’, or was it, more likely, part of occasional feasting and/or ritual events? These are complicated questions that are a permanent part of research into Iron Age life, and this volume does a good job of summarizing them, even if, understandably, it does not provide many new answers.

There are two appendices: a catalogue of stamps, painted inscriptions and graffiti, with illustrations of stamps and photos of various impact/modification marks and amphora discs/worked sherds (appendix 1), and a very large Gazetteer of Republican Amphora Findspots in France (appendix 2). The latter contains an introductory

section with two maps of France showing 'findspots plotted by commune' and 'Sites with 50, 100, 1000, or 5000 Republican amphorae', then two histograms showing '[French] Departments with 50 or more Republican Amphora Findspots', and 'Regions of France: Number of Republican Amphora Findspots', followed by three tables of lists (presumably the data upon which the maps were constructed), and then the gazetteer itself, a table of some 70 pages (in very fine print) listing every find-spot with the commune, the dating, the type of activity, the types of amphora present, and a bibliographical reference. This list alone will undoubtedly be of considerable use to any future researchers wishing to conduct similar regional studies.

As a whole this book represents a very large contribution to an apparently small but surprisingly complex and ultimately quite important subject. Understanding the transition from Iron Age culture into a more Roman way of life hinges on how we imagine the state of the earlier culture, before the real transition happened, with the arrival of actual Romans and their 'material'. What is particularly good about the book is the fundamental decision to examine the Republican amphorae in close detail in a specific region, the Auvergne. Loughton has brought together a great deal of data in a well-structured format (in chapter 7). The introductory chapters on defining the amphora types only seem really necessary as an explanation for the diversity of methodology in defining the amphora types in question. The analysis of the data is not as clear as it could be, in chapter 8, mainly because the focus on the Auvergne includes comparisons with assemblages found well outside the region, and with so many different ways of presenting the data without really analysing the results, or at least explaining them to the reader. Yet such comments are not intended to detract from the substantial weight that this work will bring to future studies on Republican amphorae; the collated information herein is a major contribution. This is a book that should provide a template for future studies of these remarkable vessels in other regions of France and surrounding countries.

Bibliography

- Laubenheimer, F. and Marlière, E. 2010. *Échanges et vie économique dans le Nord-Ouest des Gaules. Le témoignage des amphores du IIe siècle avant J.-C. au IVe siècle après J.-C.*, 2 volumes, Presses universitaires de Franche-Comté.
- Laubenheimer, F. and Schmitt, A. 2009. *Amphores vinaires de Narbonnaise, Production et grand commerce. Création d'une base de données géochimiques des ateliers*, Travaux de la Maison de l'Orient et de la Méditerranée, No. 51, Lyon and Paris.
- Peña, J.T. 2007. *Roman Pottery in the Archaeological Record*, New York.
- Tomber, R.S. and Dore, J. 1998. *The National Roman Fabric Reference Collection: A Handbook*, London.

Insight from Innovation: New light on archaeological ceramics, edited by E. Sibbesson, B. Jervis and S. Coxon, 2016, Southampton Monographs in Archaeology New Series 6, 277 pages with 85 colour and B&W illustrations and 13 tables. ISBN 978-0-9926336-4-6

Reviewed by Edward Biddulph

The late Professor David Peacock was a pioneer of archaeological science, which he applied in particular to Roman ceramics to gain insight into production, provenance, and trade. His seminal volumes – *Pottery in the Roman World: An Ethnoarchaeological Approach* (1982) and, with David Williams, *Amphorae and the Roman Economy: An Introductory Guide* (1986) – remain essential reading for students of Roman pottery and invaluable references for those rather longer in the business of pottery studies. David Peacock's work on sourcing pottery using the method of geological thin-sectioning was revolutionary, transforming our understanding of long-distance pottery supply and trade in the Roman world (eg Peacock 1967; 1971; 1973). The principles established by David were instrumental, too, in the success of the National Roman Fabric Reference Collection (Tomber and Dore 1998), which set the standard for the identification of significant traded wares.

It was only fitting, therefore, that a conference was held in 2012 at the University of Southampton, where David had taught since 1968, to celebrate his contribution to ceramic studies. A number of papers from that event, plus a few others, have been brought together in the volume *Insight from Innovation: New Light on Archaeological Ceramics* (2016), edited by Emilie Sibbesson, Ben Jervis and Sarah Coxon. Many of the contributors were David's students and the attention of the papers to questions of source, organization of production and scientific method trace a direct link to David's own work. More generally, the volume brings readers up to date with some of the latest research in ceramics. Sadly, David never saw the publication of the proceedings, though he was able to read drafts of the papers.

There is much in the book to interest the Roman pottery specialist. Richard Jones and Louisa Campbell's paper on the non-destructive analysis of samian ware from Scotland using portable XRF establishes chemical signatures for key samian production sites. The results correlate well with more traditional means of identifying source, most obviously decoration and potters' stamps, and the method offers an objective means of discriminating not only between samian wares, but other fine-textured fabrics. From a practical point of view, the method seems limited, but the prospect of being able to differentiate between the growing number of unsourced fine colour-coated wares, oxidised and grey wares that do not quite fit with the usual suspects is an exciting one, and one that is entirely in the spirit of David Peacock's earlier work.

Yvonne de Rue's investigation of finger marks on medieval pottery from Germany is another paper also likely to be of interest. By systematically recording the finger marks retained on the pottery – paying attention to direction, size, depth, technique, the part of the hand used, and so on – the author has been able to gain remarkable information on how pottery-production skills were acquired and who was involved in the various stages of pottery making (including children, who in this case were responsible for working on the handles). Readers will never look at finger marks on pottery in the same way again.

In their paper on vessel volumes and visualizing pottery, Matt Brudenell, Vicki Herring and Donald Horne draw attention to the great deal of ceramic research that is being designed and undertaken outside universities by specialists working in the commercial sector. Such research is often carried out 'within shoe-string budgets and rare moments of independent research time', but benefits from the wealth of data generated by development-led archaeology or innovative analytical tools now routinely employed by commercial organizations. In this case, the authors showcase computer-based 3D modelling as a way of visualizing vessels, and demonstrate that the relationship between the volume and diameter of early and mid-Iron Age jars and bowls is so consistent that the capacity of any such vessel can be calculated using a simple formula and the values for radius and diameter. This is a neat piece of research that left this reviewer wanting more. Research that reveals the extent to which this relationship continued into the Late Iron Age and the Roman period cannot be far behind.

Pottery researchers looking at the relationship between form and function will no doubt be turning to Joanita Vroom's analysis of pottery in the Byzantine world, which harks back to David Peacock's work on production and distribution and interest in the pottery of the eastern Mediterranean. The author traces changes in the shapes of cooking jars over time and examines the changing sizes of tablewares to identify a shift in dining practices. Byzantine society, it seems, gradually moved away from communal dining to non-communal, small-group dining. This is reflected not only in the pottery, but also methods of preparation as outlined in cookbooks of the time and depictions of table settings in Byzantine art.

The studies by Brudenell and others and Vroom highlight the importance of quantification and consistent

recording and the value of 'big data' research. Such themes are touched upon in the book's final contribution by Jane Evans, Duncan Brown and David Knight. The paper looks back to some of the innovative research and initiatives in pottery studies (many of which involved David Peacock to lesser or greater extents), discusses the challenges of pottery studies, particularly within the commercial environment, and makes a compelling case for consistent methodologies and the application of best practice across period specialisms. (It is extremely gratifying that since the publication of *Insight from Innovation*, a joint standards document, a result of collaboration between the Prehistoric Ceramics Research Group, the Study Group for Roman Pottery, and the Medieval Group, has been published: *A Standard for Pottery Studies in Archaeology* (2016)).

As with most collections of papers that cover a range of periods and topics *Insight from Innovation* is more of a book to dip into than read from cover to cover. And it is not an easy read either, with a number of the papers presenting highly technical work. Do not, however, let that put you off; the book is certainly worth the extra concentration that some of the contributions may require. The editors are to be congratulated for bringing the conference proceedings together and producing an attractive, and what will prove to be indispensable, book. The volume is a fine tribute to Professor David Peacock and provides evidence (if more were needed) for the enormous contribution that pottery makes to our understanding of the past.

Bibliography

- Peacock, D.P.S. 1967. Romano-British pottery production in the Malvern district of Worcestershire, *Transactions of the Worcestershire Archaeological Society*, 1, 15–28.
- Peacock, D.P.S. 1971. Roman amphorae in pre-Roman Britain, in M. Jesson and D. Hill (eds) *The Iron Age and its Hillforts*, Southampton, 161–88.
- Peacock, D.P.S. 1973. The Black-Burnished pottery industry in Dorset, in A. Detsicas (ed.) *Current Research in Romano-British Coarse Pottery*, CBA Research Report 10, London, 63–5.
- Peacock, D.P.S. 1982. *Pottery in the Roman World: An ethnoarchaeological approach*, London.
- Peacock, D.P.S. and Williams, D.F. 1986. *Amphorae and the Roman Economy: An introductory guide*, London.
- Tomber, R.S. and Dore, J. 1998. *The National Roman Fabric Reference Collection. A Handbook*, London.

Résumés

L'importation et la distribution d'amphores orientales dans les provinces du Rhin

Tyler V. Franconi

Cet article analyse les indices de la présence d'amphores d'origine méditerranéenne orientale dans la région du bassin du Rhin. La nature de l'échantillon disponible est évoquée. Les problèmes résultant non seulement des impacts potentiels des programmes de recherche sur les types de sites sujets à être fouillés, mais aussi des précédentes méthodes de quantification utilisées par ceux qui ont répertorié les assemblages – et même une absence de quantification – sont discutés. Même si elles ne représentent qu'une très petite proportion des amphores consommées dans les provinces du Rhin, les amphores orientales se présentent néanmoins par leur grande diversité de formes. Trois types, des conteneurs de vin, sont toutefois plus fréquents. Les chiffres suggèrent que l'approvisionnement de la région était partagé de manière 'égale' entre les militaires et les populations civiles, ou du moins ils avaient un accès égal aux amphores de ces provenances. Ceci soulève des questions quant aux mécanismes d'approvisionnement. Le niveau d'importation le plus important a eu lieu durant le début de l'époque romaine, leur nombre diminuant dans le courant du premier siècle de notre ère. Les coûts de transport et la montée de la production de vin au niveau régional et local, expliquent probablement en grande partie ce déclin; toutefois, la tendance à la diminution progressive de l'approvisionnement de longue distance est constatée de manière plus importante dans le commerce des amphores romaines. Les exemples d'importations orientales apparaissent en petit nombre à l'époque romaine tardive: elles avaient certainement une valeur de rareté et seraient probablement associées à des consommateurs d'élite.

La poterie romaine dans les contextes rituels: types, matériaux et manipulations *Constanze Höpken et Manuel Fiedler*

Dans cet article, nous considérons les caractéristiques des types de poterie présents sur les lieux de culte et dans les contextes rituels, et comment la nature de cette poterie peut indiquer de telles activités. Certains types de récipients sont plus révélateurs de rituels que d'autres, en vue de leur forme et de leurs attributs, mais des éléments de poterie d'usage 'courant' ou 'quotidien' peuvent aussi se rencontrer sur ces sites et contextes. Les récipients

décorés avec des serpents et en forme de brûle-encens, aussi bien que les siphons et les récipients à bord perforé, fabriqués pour un usage précis, sont particulièrement révélateurs. Lorsque la poterie de type plus 'courant' est trouvée dans des contextes culturels, certains aspects et attributs révèlent potentiellement son usage rituel. Il faut néanmoins faire preuve d'une certaine prudence et éviter les interprétations hâtives. Ces aspects et attributs se retrouvent souvent en association, ou aux côtés d'autres indices reflétant la mise en place spécifique du contexte, qui peuvent mener à l'interprétation du contexte comme étant associé aux rituels et au culte.

Un four de potier à deux alandiers et fosses de travail du début de la période romano-britannique à Church Road, Snape, Suffolk **Antony R.R. Mustchin et Andrew Peachey avec les contributions de John R. Summers**

Entre février et mai 2013, Archaeological Solutions Ltd a mené des fouilles sur un terrain situé à Church Road, Snape, Suffolk. Le projet a révélé une abondance d'indices datant de la période romano-britannique (milieu à fin du premier siècle de notre ère). Parmi les éléments importants, on trouve un four de potier à deux alandiers et fosses de travail (2633) situé dans une zone d'enclos à fossés. L'assemblage de poterie romaine comprenait principalement un groupe de déchets du four 2633, représentant des matériaux soit cassés pendant la cuisson, soit rejetés et remblayés lorsque le four fut abandonné.

Ensembles de céramiques antiques trouvés dans des fosses, dans une incinération et dans d'autres vestiges archéologiques à Sholden, dans le Kent *Rob Perrin*

Des fouilles menées par Headland Archaeology (GB) Ltd en 2013 juste au nord-ouest de Sholden dans le Kent (Jeffery 2015) ont mis au jour un groupe de vestiges archéologiques romains vraisemblablement en lien avec la villa d'Hull Place (Parfitt 2009a; 2009b). De très importantes quantités de poteries romaines ont été retrouvées, la plupart provenant de fosses et un rapport exhaustif a été préparé. Malheureusement, en raison de certaines contraintes, seule la publication d'un résumé dans le rapport de site a été possible (Perrin 2015). Néanmoins, les lots céramiques

provenant de trois des fosses ainsi que d'une crémation sont suffisamment intéressants pour justifier une publication plus détaillée dans cet article.

Du pain et des jeux, des côtelettes et des saucisses? Des fours romano-britanniques préformés, et des plaques de cuisson en céramique *Jane Evans, avec Alison Heke et Andrew Peachey*

Les indices concernant les méthodes de cuisson peuvent permettre de mieux comprendre les pratiques sociales et culturelles dans un sens plus large, et une compréhension des structures des fours utilisés contribue à l'interprétation des indices de poterie en ce qui concerne la préparation et la consommation de nourriture. Dans cet article, nous résumerons et examinerons les preuves récentes de l'usage de fours préformés, mises à jour lors de fouilles à Worcester, Chester et Soham. Notre article prend appui sur l'étude de Maggi Darling de 2012, dans le but d'assurer que ces découvertes soient plus largement reconnues et répertoriées, afin d'encourager de nouvelles recherches synthétiques.

Chenets courbes en céramique dans les Basses Terres occidentales (Flandres et les Pays-Bas occidentaux) à l'époque romaine *Jeroen van Zoolingen*

Suite à la découverte de fragments de céramique représentant des chenets courbes sur le site de La Haye-Uithofslaan, les exemples de ce type d'accessoire de cuisson découverts dans des contextes de l'époque romaine dans le nord-ouest de l'Europe sont examinés. Des aspects de leur fonction et de leur usage sont étudiés, tout comme la signification potentielle des symboles décoratifs y figurant. L'article élargit sa portée en considérant le développement de l'utilisation de chenets à travers la dernière époque de la Préhistoire jusqu'à, et y compris, l'époque romaine. Contrairement aux chenets de fer utilisés durant l'Age du Fer, ces formes en céramique se retrouvent dans des contextes qui ne sont pas d'élite. Le rapport aux chenets gallo-romains en terre cuite déjà connus de la région qui est maintenant le centre et le sud de la Belgique est analysé. La possibilité d'un lien avec des traditions et origines germaniques est actuellement non résolue. L'analyse de ces ustensiles de cuisson mènera, nous l'espérons, à l'identification d'autres exemples.

Un ensemble de céramiques de la fin de l'Age du Fer et du début de l'Antiquité trouvé à Leybourne Grange, West Malling, dans le Kent *Edward Biddulph*

Des fouilles entreprises par Oxford Archaeology à Leybourne Grange près de West Malling dans le Kent ont mis au jour quelques 3500 tessons de céramiques. Le

mobilier céramique date de la fin de l'Age du Fer au début de l'époque romaine et est typique d'un site rural; bien que la présence de quelques pièces importées telles que des amphores, céramiques fines Gallo-Belges et sigillées, suggèrent tout de même que ce site faisait partie d'un réseau plus vaste d'échanges commerciaux. Un des points remarquable de ce lot est la présence de céramiques à pâte dégraissée avec des fragments de roches identifiés par une étude pétrographique comme provenant de grès. Cette céramique, jusque-là non attestée dans la région, est probablement de manufacture locale puisque le grès provient de la formation géologique sédimentaire du sous-sol, la Hythe Formation. En dépit de la disponibilité de ce matériau dans le sous-sol, l'utilisation de grès comme dégraissant semble avoir été de courte durée, peut-être que ceci correspond à une expérimentation lors d'une période faste de production. L'article traite de cette céramique dégraissée au grès dans son contexte régional et étudie également les autres sources de céramiques, les questions de déposition et le statut du site.

Sigillées africaines du nord ("African Red Slip ware") et phocéennes tardives ("Late Roman C ware") des cinquième et sixième siècles ap. J.-C. de Ossonoba (Faro, Algarve, Portugal): ensemble d'Horta da Misericórdia *Edgar Fernandes*

Cet article examine les sigillées africaines du nord ("African Red Slip ware") et phocéennes tardives ("Late Roman C ware") des cinquième et sixième siècles ap. J.-C. trouvées à Horta da Misericórdia, un site archéologique à l'intérieur des anciens remparts de Ossonoba, actuellement Faro, en Algarve, au Portugal. Le but est de fournir des données supplémentaires concernant le contexte plus large du commerce d'importation de cette ville à l'époque romaine et à l'Antiquité tardive, comme le présente Catarina Viegas. Dans son étude sur le peuplement et l'économie en Algarve centrale et orientale (2011), Viegas a montré que de la poterie provenant de partout dans l'Empire – et en particulier de ses provinces occidentales – fut importée à Ossonoba à l'époque romaine et à l'Antiquité tardive. Parallèlement à des ensembles céramiques d'autres sites clés de la région, elle a examiné les amphores et les céramiques fines de deux sites (le Mosaïque de l'Océan et le Musée Municipal) de Faro actuel. On note un fort déclin, à partir du milieu du cinquième siècle ap. J.-C. déjà, dans les quantités de sigillées africaines et phocéennes tardives des cinquième et sixième siècles ap. J.-C. analysées par Viegas. En revanche, toutefois, les fouilles entreprises par Teresa Júdice Gamito à Horta da Misericórdia ont révélé une quantité relativement importante de sigillées africaines et phocéennes tardives des cinquième et sixième siècles ap. J.-C., ce qui indique une continuité plus nette dans le commerce d'importation vers Ossonoba jusqu'au milieu du sixième siècle ap. J.-C.

